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DIMENSIONS OF CHILDREN'S SOCIAL AND PSYCHOLOGICAL DEVELOPMENT RELATED TO SCHOOL ACHIEVEMENT.

BY- KETCHAM, WARREN A. MORSE, WILLIAM C.
MICHIGAN UNIV., ANN ARBOR

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THE FIRST TASK OF THIS RESEARCH WAS TO CONSTRUCT A SET OF INSTRUMENTS FOR THE COLLECTION OF DATA ON CHILDREN'S SOCIAL AND PSYCHOLOGICAL DEVELOPMENT. THE PURPOSE WAS TO PRODUCE INSTRUMENTS WITH A CLOSER RELATIONSHIP TO THE CLASSROOM SETTING AND THE INTERESTS AND CONCERNS OF TEACHERS THAN MOST OF THE AVAILABLE ONES SEEMED TO PROVIDE. A LARGE POOL OF ITEMS WAS GATHERED AND ADMINISTERED TO A STRATIFIED SAMPLE OF 430 THIRD-, FIFTH-, SEVENTH-, NINTH-, AND ELEVENTH-GRADE CHILDREN. EXTENSIVE STATISTICAL ANALYSIS WAS MADE WHICH CULMINATED IN A FACTOR ANALYSIS. FROM THE FINDINGS, THREE TYPES OF INSTRUMENTS WERE CONSTRUCTED--A CLASSROOM QUESTIONNAIRE, A SEMANTIC DIFFERENTIAL, AND A CARD SORT. THE INSTRUMENTS WERE THEN USED WITH THE SAMPLE TO COLLECT DATA ON--(1) THE CLASSROOM ENVIRONMENT WITH SUBDIMENSIONS FOR LEARNING, SOCIAL STRUCTURE, SOCIAL CLIMATE, AND MENTAL HEALTH, (2) SELF-CONCEPTS, AND (3) SELF-NEEDS. IT WAS CONCLUDED THAT THE CURRENT STRESS ON ACADEMIC ACHIEVEMENT HAS NOT FORCED CHILDREN'S NEEDS INTO A DOMINANT POSITION. THE NEED FOR AFFILIATION WAS FOUND TO BE THE MOST PRONOUNCED. WHEN VIEWED AS TWO GLOBAL VARIABLES, PERSONAL SOCIAL ACHIEVEMENT AND ACADEMIC ACHIEVEMENT DID NOT APPEAR TO BE RELATED, SIGNIFICANTLY, IN THE CLASSROOM GROUPS. THE PRIMARY IMPLICATION DERIVED FROM THIS STUDY WAS THAT A MAJOR TASK OF TEACHERS IS TO PREVENT THE DEVELOPMENT OF A HIGH, POSITIVE RELATIONSHIP BETWEEN PERSONAL-SOCIAL AND ACADEMIC ACHIEVEMENT IN THE CLASSROOM. (GD)

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William C. Morse

The University of Michigan

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Warren A. Ketcham
William C. Morse

University of Michigan
Ann Arbor, Michigan

1965

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Chapter I

THE NATURE AND PURPOSE OF THE STUDY

OVERVIEW

In certain ways, educational psychology has been of direct assistance to classroom teachers, but the major claim to usefulness is indirect. Teachers come to understand how children develop and the general concepts of human learning. A great deal of attention is put upon the nature of individual pupils. The problem is that a teacher conducts the amorphous educational enterprise in a conglomerate group, his classroom. That the teacher needs to understand individual pupils goes without argument. Yet of equal importance is this matter of how these pupils function and interact in the classroom unit.

Teachers frequently remark on the differences between one class and another, on changes which take place in a class over a year's period, or on what happens when membership changes involve even a few students if they are critical ones. Classes develop reputations for being "good," "bad," or "so-so." What kind of a reality is behind these reputations? Is this character a self fulfilling phenomenon which would abide change or does it reside deep in the substrata of the interactive process? In short, teachers talk about their classes as if each has some overriding personality or nature. Some are blank and others are volatile. Some appear docile when led to the educational watering trough: others resist taking in a drop even when submerged. Above all, teachers discuss what might be done, if anything, to align classroom behaviors and appropriate educational goals.

In our early teacher-psychologist planning sessions it became clear that we soon ran short of data. Usually there was semi-adequate information available on learning potential, though stated in very general terms. And there was often information on academic achievement. We could thus describe classrooms with regard to so called academic potential and achievement indicating the mean, range and character of the distributions. The classes, of course, differed and such differences were useful in appraising certain class phenomena. But at this point we ran out of codified information and depended upon the vaguest of observations and inuendos. The need to know more led to the present study.

This present research is one of a series of efforts to find a practical and efficient way to study a limited number of the critical elements of a classroom complex. The aim is to provide more tools for systematic classroom analysis for the teacher rather than principally for the researcher, although there is no implication of a conflict of interest in this matter. In consulting with teachers, it became clear that the elements which concerned them, and particularly the conceptual formulation of these elements, would have to reflect the actual situations which teachers face day by day. Most teachers were concerned with several major aspects of the total task. They were interested in appraising how effectively the learning process was staged, what social patterns evolved, and certain mental health aspects of the classroom. They were interested in their own input, both from the level of philosophy and moment by moment practice. They were interested in the nature of their pupils, with more implied than the IQ and Achievement levels alone. In short, they were interested in dimensions of pupil behavior which could be woven into a total classroom complex.

The interest is in descriptive dimensions of a classroom which can be applied without preset evaluation. As Sechrest[1] pointed out so well, almost all studies imply the holy and the unholy acts in teaching and are thus essentially value loaded. If we can collect information about various states of affairs in the classroom, the way is left open for subsequent value applications without making intrinsic a|priori judgements as is the present custom.

This is the British spelling, not the American!

The earlier study[2] was an assessment of classroom behavior covering the areas of learning, social relationships and mental health as seen through pupil perceptions, teacher perceptions and observer ratings.

Instruments were devised to assess the teacher's ideology as well as the teacher's preferred and actual practice. Pupil perceptions were also studied. Finally, an observer also went into the classroom and also responded along the four dimensions stated above. The diverse points of view offered minimal congruence. The teacher perceptions were sometimes at odds with the pupil perceptions: at the least, they were not reliable predictors. It was evident, if we wanted the consumer's view, we must rely on pupil responses since only these enable one to appreciate pupil perceptions. The classes did differ significantly on these dimensions as seen by pupils. Considerable work was done on the pupil response patterns. A replicated factor analysis suggested that pupils across a broad age span responded with virtually the same factors.[1] Classrooms could be charted and they could be seen to differ in significant ways both in mean and dispersion of responses.[2]

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[1] Sechrest, L. Studies of Classroom Atmosphere, *Psychology in the Schools*, Vol. I, No. 2, April 1964, Pgs. 103-118.

[2] Morse, Wm. C.; Bloom, R., Dunn, J. *A Study of Classroom Behavior From Diverse Evaluative Frameworks*: *Developmental Mental Health Substantive Learning*, *Group Process*. University of Michigan, School of Education, 1961 USOE #SAE 8414.

The present study embodies both changes and expansion of the original effort. There is increased attention to other aspects of the pupil which teachers felt important. Since teacher philosophy bore little resembelance to practice and neither was much related to the pupil or observer perceptions, the present study concentrates on the perceptual field of the pupil, with relatively little data collected from teachers except for co-related perceptions of the class as a whole. The second matter which determined the direction of the present study was the work of McKeachie,[3] which also was related to the earlier findings of the McClelland group.[4] McClelland had shown that one of the matters so fundamental in understanding behavior was the motivational stance of a person, and that these differed substantially between individuals. This certainly had implications for the teacher's method. McKeachie has demonstrated that college teaching method cannot really be studied independently from the natures of the students who are targets of method. To do so cancels out differential effects.

---

[1] Dunn, J. A. A Comparative Study of Pupil Construct Systems Relevant to Classroom Conditions and Events. Ph.D. Thesis University of Michigan, 1962.
Dunn, J. A.; Bloom, R. D.; and Morse, W. C. Multiple Descriptions of Classroom Behavior Via Pupil Report, Psychological Reports Vol. 14, (1964) 651-656.

[2] Bloom, D. Some Correlates of Test Anxiety Ph.D. Thesis University of Michigan, 1962.

[3] McKeachie, W. J. "Students, Groups and Teaching Methods" American Psycholigist, 1058, Vol. 13, 580-584.

[4] McClelland, D. C.; Atkinson, J. W.; Clark, R. A. and Lowell, E. L. The Achievement Motive, N.Y. Appleton-Century-Crafts, 1953.

In summary then, this research turned upon several core goals. First, the classroom aspects studied should be seen as useful by teachers. Second, areas covered should be relevant to day by day educational ventures rather than the many extra classroom worlds of the pupil. Third, dimensions should go beyond ability and achievement. Fourth, assessment should be brief and to the point, requiring the minimum classroom time for collection if they are to find much use in the regular classroom. Fifth, instruments should eventually be developed to the point where a trained teacher could administer them as they can now do in the case of achievement tests. Sixth, the final instruments should be usable with a broad age range of pupils in order to permit developmental studies.

In this particular part of the study, the final result anticipated is a several dimension profile of a classroom, with appropriate attention to the range and pattern of responses around the mean for the class. This will provide the teacher with diagnostic information for designing his teaching input. It should be said that, having a profile of the class perceptions and needs does mean the teacher must rest the case with present status. For example, a teacher may have a group quite resistant to educational tasks, and thereby decide to start with reduced requirements, or heightened motivational efforts. But the long term over-all design could also embody such practices as would lead to increased task acceptance on the part of pupils. Another class may show the need for intensive control and management monitoring, but again, a teacher may try to alter this status so that the pupils become more self directive over time.

A BRIEF INTRODUCTION OF THE AREAS OF DATA COLLECTION

The detail of the instruments will be presented at a later point: here we will give a brief general overview. The first area of study is the perception of what the classroom is like to pupils (and teachers). The four classroom indexes, each with subdimensions, are as follows: the Learning Climate; the Social Structure; the Social Climate; and the Mental Health.

Since it is known that pupils with various personality styles perform both well and poorly in the classroom, the matter of selecting pupil "personality" factors of significance for classroom operation was resolved as follows: Some pupils are content oriented while others are disenchanted with subject matter. Other pupils appear to have different goals. Certain students seem more to "need" more peer contact than others. Also, underlying some of the myriad of personality factors is the fundamental self concept of a pupil. These two basic areas, self concept and motivation, are of prime significance to the teacher.

Since self concept is itself an ambiguous term, much effort was necessary before selecting instruments which prove teachers with useful information. The motivational area presented even more serious difficulties. Apart from interests or aptitudes, the well springs of classroom behavior lie in motivational patterns. Both clinical judgment and projective tests have been used for assessment with apparent success, but these would not fit the criterion of group administered instruments set forth above. For this reason extensive work was done on other devices. The final card sort method is worked out to assess three categories: need for achievement, need for affiliation, and need for influence or power.

It will be remembered that it was stated certain classes have individual reputations. They are thought to behave according to pattern regardless of the teacher but obviously teachers respond to a class as the class reputation suggests so these intertwined perceptions contaminate possibilities of flexibility. To study progressive effects, in this research the aim is to follow the same classes over a three year period. This would give teacher variability a chance to operate. The data collection scheme is as follows:

1962 III(24) IV(24) V(25) VII(52) VIII(48) IX(55)

1963 IV(21) V(24) VI(26) VIII(51) IX(57) X(53)

1964 III(21) *V(21) VI(24) VII(48) IX(57) X(58) XI(61)

*Tested December 1963 and May 1964-Special Study

The major comparisons provide 6 sets of 3 year sequence, for comparison at the various levels. The teachers were not always the same person for each grade which presented another fascinating research possibility. These matters will be taken up in detail in the second half of the report.

While it is not possible to get classes which stay intact over a period of three years of study, the University School where these longitudinal data were collected does have a low turnover.

It also has a doubling of population in grade VII.

Furthermore the richness of related growth information makes possible for a far more integrated classroom study, since the school already collects extensive data.

Chapter II

THE INSTRUMENT DEVELOPMENT AND THE PROBLEM OF NORMATIVE DATA FOR THE CLASSROOM QUESTIONNAIRE

OVERVIEW

Two problems confronted us relative to the major purpose of the study. One was the fact that the University School research sample was recognized as an atypical group of children, as would be expected in any such training school. If clinical judgment can be trusted, the attitudes toward school and each other in this setting were not always typical of those generally found in pupils. Also, we were interested in following these children for three years and in examining various grade levels. To do this required a normative base obtained from the scores of more representative youngsters than ours.

To this end we enlisted the cooperation of a large city school system. They in turn selected classes at the third, fifth, seventh, ninth, and eleventh grades. Further, they obtained children from several classes in each instance selected to be representative of the range from central city to surburbia. This was done by knowledgeable persons in the central office of the school system. However, it is recognized that this group of children in no way can be considered a normative group in any broad sense. The claim is simple. These 430 children are from a typical Michigan city and the school from which the classes were drawn represent all strata. This provides us with a much more adequate basis of operation than we could have obtained by comparison within our own research sample alone.

The overall impressive factor of our comparisons between grades on the various dimensions in the previous study was the general consistency from age to age a finding which was unexpected. In the present group the pattern is less consistent though variations are minimal with the one consistent exception of the third grade. In most instances this grade responded in a manner differing significantly from the responses of the other grades. The fact that different individual classes did differ was ascertained since homogenity might otherwise have been a function of non differentiating instruments rather than the nature of the children. Also, broadly speaking, boys and girls responded in a similar way as indicated by "t" and "f" tests run on grade and sex differences on each of the dimensions and on all of the instruments. These grade (and sex distributions when necessary) were the basis of the norm tables which enable the conversion of the raw score into a standard score.

What follows is a description of the development (or in some cases adaptation) of each instrument used, and data concerning the grade level functioning and trends in the pupil responses.

THE CLASSROOM QUESTIONNAIRE

As was mentioned, in the previous study, School Classroom Behavior, an effort was made to study classroom phenomena from diverse frameworks and from diverse perceptions. In this instance pupil perceptions, teacher perceptions and observer data were collected on four aspects of the classroom operation. These were the learning stance, the mental health climate, the social pattern and the accomodation to individual differences. It was found that the teacher philosophy, idealized practice and actual practice had little relationship: pupil perceptions and observational data had little relationship to any of the teacher materials. Furthermore, the items used to center on individual differences were apparently not adequate, for that concept could not be isolated as a separate dimension and was dropped.

Now it would be well to reflect on the method of question selection used in the previous study and the present one. In both instances, pilot tested items were given to students at various grade levels. The item distributions were then examined from two points of view: did they (on a four point scale) approach a normal distribution without overloading on one or the other end but all utilizing the whole scale? Second, were there similar patterns for boys and girls and over age levels. The search was for questions which could be used with both elementary and high school pupils.

Now it should be apparent that this is a two edged proposition. Selecting questions with broad usuage also may be selecting questions which reduce the discrimination at one or another age level. We had been led to this because with less careful scrutiny of items, these had been the surprising lack of difference in response patterns indicated for the earlier study where the questions had not been preselected with this in mind. At any rate the reader is cautioned to consider the matter of item selection in interpreting results. As it happened, however, there did turn out to be cumulative subpart and total score differences which made grade level norms necessary on many dimensions anyway, a matter which will be discussed in due time. While there is a general consistency, there was not the degree of similarity found previously.

Several experts collaborated with the major investigators in the setting of dimensions used in the present work. Dr. Elmer VanEgmond brought the insights of the Lippitt-Fox[1] work on group conditions in the classroom and the matter of individual and group norm items. Dr. Allen Menlo collaborated particularly on mental health items. While Dr. Warren Ketcham had a primary concern with the creativity study, he reviewed all of the items used here as well. Dr. Robert Dixon was particularly interested in the items on classroom learning and formulated the materials around the rubric set forth by Guilford.[1] Research assistants Dr. Calvin Dyer and Miss Linda Katz were also involved in this process.

---

[1] Institute for Social Research, University of Michigan.

After all the selection and pretesting, the number of items was cut from 420 to 186 in order to fit our time goal of an average of 45 minutes. While we will present a rather thorough analysis of the operation of the questionnaire, it should be appreciated that there are certain questions to which we addressed ourselves in the items themselves. In the first place, we selected items pretested from the previous research and of agreed face validity. Second, we again tested their functioning in a field situation.

The various constructs which postulated item selection are not considered interrelated though, of course, in practice they well may prove to be. But to find that they are statistically related does not prove the theoretical point. If we take concept such as classroom motivation, we are assuming that all of the sub items will, of course, be related to this construct as a measured totality. But we purposefully eliminated pair items from the original form which had high intercorrelations. This means we looked for a diverse sample of indicators rather than a pool closely integrated ones for the subdimensions. Of course, no items with a negative correlation would be included in those selected for a common score. On the other hand, the items selected well might be independent of each other and not be related positively to a significant degree either. For this reason, we end up with a set of items that are designed to be as discrete in what they sample as is possible within a particular subdimension. This reduces the ease with which clean factors can be expected in factoring.

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[1] Guilford, J. P. "A Revised Structure of Intellect" _Reports from the Psychological Laboratory IV_. 19, (1957) University of California.

The matter of reliability of the classroom questionnaire was discussed in the previous study. There are two problems involved. One, as Sarason[1] has demonstrated, defensiveness toward emotionally focused scales (the anxiety and other mental health aspects) increases over time making test retest problematic for some items. For this reason the possibility is that reliability coefficients would probably be higher than are indicated by the statistics. The other problem is that we eliminated items with high relationships and attempted to cover many areas of demonstrated low interrelationships, which means each should contribute differentially and are poor for internal splits.

Most of these items have been used in other studies, though alterations in the stems and format have been made since that time. In the previous examination of the very similar but not identical test-retest of items in the questionnaire, the relationship ranged as high as .70; when a factor analyses was done, item communalities ranged up to .76.[2] Sarason reports test-retest correlations of .55 to .78 for his school anxiety items. Other items used previously by Dixon and Morse[3] used some of the same items referring to teachers and obtained a reliability coefficient of .92, and others have reported similar results for various items of nature used.

---

[1] Sarason, S. B; Davidson, K. S.; Lighthall, F. F.; Wait, R. R. and Ruebush, B. K. *Anxiety in Elementary School Children*, N.Y., John Wiley and Sons, Inc. 1960.

[2] Dunn, J. A., Bloom, R. D. and Morse, W. C. "Multiple Descriptions of Classroom Behavior Via Pupil Report" *Psychological Reports*, 1964 pgs. 651-656.

[3] Dixon, W. R. and Morse, W. C. "The Prediction of Teaching Performance: Empathic Potential". *Jo. of Teacher Education*, Vol. XII, No. 3, Sept. 1961, pp. 322-329.

We are indebted to Dr. Frank W. Lutz for a reliability study on a test-retest basis of the original questionnaire before it was somewhat reduced.[1] Recognizing the difficulties with the anxiety material, he ran the Sarason material separately. He used a random sample of 20 children from various schools for each of grades four, five and six. For the Learning Index, r-.73, .68; Group Process, r=.68, P=.76; Pupil Adjustment, (mental health and certain other items) r=.76, P=.77. He states that the two week interval may have produced real changes which are compounded with measurement reliability. A new study is planned with the present instrument since it is somewhat shorter than the one used by Lutz, and could therefore be expected to be of somewhat lower reliability unless the special care taken in item selection compensates.

Before presenting the statistical information, we will list the content for each of the four indexes: Learning, Mental Health, Social Structure, Social Climate. Then we will look at the intercorrelation and factor material as well as the age-grade level changes or trends.

THE LEARNING COMPLEX

There are in all a total of 20 items comprising the Learning Index, plus 10 norm items. These are grouped into four dimensions exclusive of the norms: involvement (3 items); conventional intellectual processes (7 items); complementary intellectual processes (5 items) and reinforcement (5 items). These relationships are presented in the table on the following page.

---

1 Lutz, F. W. A Reliability Study of the Morse-Pupil Questionnaire. 5 pg. manuscript, Oct. 1, 1963. Abo Project, Artesia, New Mexico

TABLE I

Learning: Significant Intercorrelations

N = 430
5% Level 10
1% Level 12

		I 15	I 57	I 20 R	I 21 R	I 25 R	I 28 R	I 24 R	I 69	I 18 R	I 22 R	I 26 R	I 29 R	I 23 R	I 27 R	I 14 R	I 16 R	I 56	I 17 R	I 19 R
Classroom Learning Involvement	I 12	36	21	10								-15								-16
	I 15		23						10	10	-14	-12							-12	
	I 57				-11					12				13			-11	25	-16	-11
Combined Intellectual Process Conventional	I 20									16		11				18			15	
	I 21					18		11				11			15	-14				
	I 25						29					15	13		23	-15			15	
	I 28												11							
	I 24								11			08					17			
	I 69									10										
	I 18										28	-15		-13						
Complementary	I 22											15	13	12	14				15	14
	I 26												12	21	24	-11			12	16
	I 29													14	22			-11	19	15
	I 23														23			-16	19	
	I 27																		10	18
Reinforcement	I 14																15			
	I 16																	-22		
	I 56																			
	I 17																			
	I 19																			

ITEMS CORRESPONDING TO TABLE I

I 12 Do you find yourself thinking about other things when you're supposed to be doing the classwork.

I 15 How often do you get bored in this class.

I 57 This teacher makes most everything seem interesting and important

I 20 Does it seem that the main thing in class is to let your mind act like a sponge and soak up as much as possible.

I 21 On tests are you asked to "fill in the blank" or "give dates".

I 25 Do you have to remember lists of things in the right order.

I 28 Do you have homework in which you have to memorize things.

I 24 Does the teacher give attention to individuals in your class who don't seem to understand the work.

I 69 This teacher lets us think for ourselves.

I 18 Do problems you work on in school usually have only one right answer.

I 22 Do problems you work on in school have several answers that are right.

I 26 How often are you asked to see how many different ideas you can think up about a problem.

I 29 In this class are you asked to try new or different ways of doing things.

I 23 After you've finished studying something, does the teacher ask you how good you think the ideas are.

I 27 Are you ever asked to decide whether things you are learning agree with ideas you've had in the past.

I 14 Do you really know for sure whether the work you do is right or wrong.

I 16 Does the teacher correct your work so you know how well you do.

I 56 This teacher checks our work to make sure that we are on the right track.

I 17 Do you use what you learn in class to help you outside of school.

I 19 When you are outside of school do you talk about things you learn in class.

Involvement The three involvement items are all intercorrelated at better than the 1% level. As to the other processes, there is a mixed picture. The first observation is that most of these items are independent. Of the 9 significant relationships to conventional and complementary dimensions, four are negative and five are positive. With reinforcement items, negative relationships predominate except for the fact that the majority are independent. This suggests the tendency for high attention to reinforcement to be found with low involvement. This is probably because of other negative aspects which are reflected in intense reinforecment.

Conventional Processes Out of the 21 possible intercorrelations of conventional processes only six are significant, none being in the negative direction. The several significant correlations with complementary items are all memory. It seems that the presence of memory conditions in a classroom does not define the nature of other learning aspects. The relationship between "one right answer" and divergent types of items is negative as one would anticipate. There is little relationship to reinforcement items, and what there is contains both positive and negative correlations.

Complementary Processes Of the 10 possible interrelationships of the complementary items, all are positive and significant at the 1% level, constituting the only saturated set of relationships in the learning complex. The complementary items are also positively and significantly related to the two utility-feedback items. There is an apparent connection between the divergent type of learning and its value outside of the classroom. While only three of the correlations to the right or wrong feedback items have any significant relationships, the three are negative.

Reinforcement Processes The impressive thing about the reinforcement items is their independence, only two are significant, one positive and one negative.

Norm Items While there are times when the norm items relate, sometimes negatively, to the area they reflect, in general they have ambiguous relationships to their focus areas. Their basic relationships are to each other as the two following tables show.

TABLE 2

Learning Self Norm Item Intercorrelations

		II 19	II 26	II 27	II 29	II 25
Involvement	I 13	28		21	13	19
	II 19		14	27	13	27
Combined Intellectual	II 26			20		
Complementary	II 27				12	19
Reinforcement	II 29					14
Utilization	II 25					

ITEMS CORRESPONDING TO TABLE 2

I 13 It is good to take part as much as possible in classroom work.

II 19 Pupils should work as hard as possible on their school work.

II 26 Memorizing school lessons is very important.

II 27 It is often a good thing to figure out more answers for things than just those answers the teacher gives.

II 29 Teachers should give information right away on how well you do in your classwork.

II 25 What we learn in school helps us in what we do outside of school.

Of the fifteen relationships only 3 are not significant and this at the 1% level. There the single tendency for the memorization item to be less related than the others. Here is the first indication that the pupil has a general norm response about the classroom, not connected to the several sub areas, but the proof of this awaits the factor analysis.

TABLE 3

Intercorrelations: Group Norm Items

		I 46	I 52	I 53
Involvement	I 40	19	19	19
	I 46		35	28
Combined Intellectual Process	I 52			27
Complementary	I 53			

ITEMS CORRESPONDING TO TABLE 3

I 40 It is good to take part as much as possible in classroom work.

I 46 Pupils should work as hard as possible on their school work.

I 52 Memorizing school lessons is very important.

I 53 It is often a good thing to figure out more answers than just those answers the teacher gives.

All of the group items are positively interrelated at least to the 1% level of significance. These norm items are seldom related at all to the individual content items in the corresponding area. It will be interesting to see if the same pattern relative to norms is found in the other dimensions.

Not presented are the intercorrelations of the self and group norm items. Somewhat less than half are significant, but all that are are positive. It would appear that the norm the individual has for himself, he also imparts to the group.

DEVELOPMENTAL CHANGES: LEARNING

There are many aspects of the learning dimensions which appear to change over age levels. In Tables 4 & 5 we see that the third grade is usually significantly different in response than most other grades, except for self norms and reinforcement. Some interesting sub aspects can be pointed out. Involvement shows a consistent sequence of drops for both sexes until the eleventh grade. While not every step is significant, most are. In combined intellectual processes, with one exception, (V-XI) all the significant changes are with grade three. Pupils tend to see less of the conventional intellectual activity in class while complementary suggests the start of a reverse by the eleventh grade. Reinforcement stays virtually the same over the grades. As to total learning atmosphere, the pupils in the third grade perceive a higher condition than do any of the others. The seventh grade reverses the trend for decreases until grade eleven. Self norms are the same throughout, but there is a gradual and significant reduction in the perceived group norms. That is, while pupils feel they maintain their posture, what they see relative to group norms tends to decrease over the age spread. While the actual number of items differs by one and could be expected to make the actual self norm higher by at most 4 points, or more likely the mean accumulation of say 3, the discrepancy is actually over 7 points, and increases

TABLE 4

CLASSROOM LEARNING: AGE AND SEX BY GRADE

Grade		N	Involvement M	Involvement SD	Combined Intellectual M	Combined Intellectual SD	Conventional** Intellectual M	Conventional** Intellectual SD	Complementary Intellectual M	Complementary Intellectual SD	Reinforcement*** M	Reinforcement*** SD	Total Classroom Learning Index M	Total Classroom Learning Index SD
III	B	41	10.29	1.40	33.12	4.32	20.10	3.39	13.02	3.06	14.98	2.18	58.39	5.61
	G	41	10.10	1.83	33.41	3.92	20.05	2.78	13.37	2.68	15.32	2.75	58.83	5.96
	T	82	10.20	1.63	33.27	4.13	20.07	3.10	13.20	2.88	15.15	2.49	58.61	5.79
V	B	51	9.14	1.90	32.47	4.24	19.63	2.79	12.84	2.70	14.47	2.19	56.08	4.93
	G	48	10.00	1.54	30.29	4.43	18.38	2.97	11.92	2.80	14.56	2.32	54.85	6.23
	T	99	9.56	1.79	31.41	4.47	19.02	2.94	12.39	2.79	14.52	2.25	55.48	5.13
VII	B	49	8.78	1.85	32.49	3.79	19.45	2.63	13.04	2.46	14.78	2.38	59.04	5.23
	G	35	9.14	1.85	31.80	3.47	19.89	2.41	11.91	2.27	15.31	2.20	56.26	5.37
	T	84	8.93	1.86	32.20	3.68	19.63	2.55	12.57	2.45	15.00	2.32	56.13	5.29
IX	B	35	8.43	1.99	31.23	3.36	19.71	3.00	11.51	2.25	14.74	1.93	54.40	4.79
	G	45	8.22	2.08	30.62	3.83	19.33	3.00	11.29	2.66	15.31	1.64	54.16	5.77
	T	80	8.31	2.04	30.89	3.64	19.50	3.00	11.39	2.49	15.06	1.80	54.26	5.36
XI	B	50	8.42	2.03	30.02	3.30	18.26	2.07	11.76	2.35	15.12	1.89	53.56	5.10
	G	35	8.91	1.81	31.06	3.54	18.37	2.56	12.69	2.45	15.94	2.22	55.91	5.69
	T	85	8.62	1.96	30.45	3.44	18.31	2.29	12.14	2.43	15.46	2.07	54.53	5.48
Total														
	B	226	9.00	1.97	31.86	4.00	19.38	2.84	12.47	2.66	14.81	2.15	55.67	5.39
	G	204	9.29	1.98	31.38	4.07	19.18	2.88	12.20	2.70	15.38	1.06	55.92	6.06
	T	430	9.14	1.97	31.63	4.03	19.29	2.86	12.34	2.68	15.02	2.23	55.79	5.72
POSSIBLE RANGE			3 - 12		12 - 48		7 - 28		5 - 20		5 - 20		20 - 80	
ACTUAL RANGE			3 - 12		20 - 46		11 - 27		5 - 20		9 - 20		36 - 74	

SIGNIFICANT DIFFERENCES 01 ⟷
05 ⟵⟶

SIGNIFICANT F TEST * 5 - 11
** 3 - 11, 5 - 11, 9 - 11
*** 3 - 9, 5 - 9, 7 - 9

TABLE 5

CLASSROOM LEARNING NORMS

Grade		N	Self Mean	Self SD	Group Mean	Group SD
III	B	41	19.44	3.03	13.17	2.23
	G	41	19.24	3.18	13.15	2.12
	T	82	19.34	3.11	13.16	2.18
V	B	51	19.43	2.82	12.35	2.02
	G	48	19.23	2.63	11.08	2.64
	T	99	19.33	2.73	11.74	2.43
VII	B	49	19.67	3.03	11.47	2.94
	G	35	19.06	3.07	11.66	2.56
	T	84	19.42	3.06	11.55	2.79
IX	B	35	19.31	2.47	11.46	1.68
	G	45	18.29	2.44	10.27	2.10
	T	80	18.74	2.50	10.79	2.02
XI	B	50	18.48	2.74	10.42	2.42
	G	35	19.06	2.38	11.20	2.09
	T	85	19.72	2.61	10.74	2.34
TOTAL						
	B	226	19.26	2.87	11.74	2.51
	G	204	18.97	2.75	11.44	2.50
	T	430	19.12	2.83	11.60	2.52
POSSIBLE RANGE			6-24		5-20	
ACTUAL RANGE			11-24		4-16	

Significant F Test: * 3-9; ** 7-9

over the age span. In other words, the sum total of self report which should be the non projected group report norm is higher than that which the members assign to each other. All of the "I's" add up much higher than the same persons when they are "They's". The explanation may be protective, as a way to assuage one's own feelings; it may be a distortion of the actual caused by feedback which comes more from those who pretend to be less involved. Whatever the cause, it is obviously one way to reduce one's own appreciation of the school situation and may be a most important factor for teachers to understand, especially in classes where this is extensive. Perhaps the peer communication system sends out messages which are purposefully distorted.

At any rate, the need for separate norms to compare changes across grades in most of the learning areas is obvious.

THE SOCIAL STRUCTURE COMPLEX

The social structure index includes 13 items comprising two major dimensions each with sub parts plus 10 items in the individual and group norms. Of 78 possible correlations, 27 are significant with 14 being negative, certainly not an impressive array. Independence is the general condition.

Concentrated vs Dispersed The surprising observation in this area is the lack of interrelationship, even in the items. In the two cases, the items keyed to the same specific concept are positively interrelated. In one instance there is a negative correlation of -.10 between choice of pupil leaders and working in the same groups, each probably reflecting different major teacher management influences at work.

There is practically no relationship between power concentration and control adequacy. The I-59 item suggests that pupil management opportunity and good behavior when the teacher is not there do not have the idealized relationship often

TABLE 6

Social Structure: Intercorrelations of Items

		I 4	I 30	I 31	I 2	I 32	I 33	I 34	I 58	I 59	I 67	I 66	I 68
Concentrated vs Dispersed Responsibility	I 3	24								-11			-17
	I 4					-10				-15	11		
Few vs Many	I 30			12									
	I 31						16			-10			
Communication	I 2												10
	I 32						12			-15			
Control Adequacy Rigid vs Flexible	I 33							30		13	-18	-13	-15
	I 34								-10	-12		-12	-16
Chaotic - Reasonable	I 58									21	17		24
	I 59										14	14	
	I 67											24	18
Task Expectation Clarity	I 66												
	I 68												

ITEMS CORRESPONDING TO TABLE 6

I 3 If there were some new rules about how class members should act in class, who would decide? Just the teacher. The teacher with a little help from the class. The class with the help from the teacher. The class by itself.

I 4 If the class had leaders who helped run the class, who would decide what pupils are to be leaders? Just the teacher. The teacher with a little help from the class. The class with help from the teacher. Just the class by itself.

I 30 How often do just a few kids decide everything in this class.

I 31 Do you help in deciding what activities the class will do.

I 2 When we work in groups or committees: We always work in the same group. We usually work in the same group. We change group members often. We change group members almost every time.

I 32 Can you choose the pupils you will work with in class activities.

I 33 In this class can you choose individual things for just yourself to do.

I 34 Are some pupils permitted to work ahead while others are given more time to do the work.

I 58 This teacher keeps order with a firm hand.

I 59 This class behaves well even when the teacher is out of the room.

I 67 Pupils get away with doing things they shouldn't in our class.

I 66 Pupils in this class get mixed up and are not sure what they are supposed to do.

I 68 The teacher wanders and gets off the subject.

postulated.

Control Adequacy The control adequacy items certainly suggest a lack of coherence of this concept as measured by these items. While most of the items are related, eight are negative and eight are positive. It will be most interesting to see what happens when this is factored. What is suggested is that the assessment of control and discipline is certainly difficult to set up for pupil evaluation.

Norms Even the norms in this index show less coherence than seen in learning.

TABLE 7

Norms: Intercorrelation of Self Items

		II 24	II 22	II 30	II 23
Concentrated					
Responsibility	II 28		13	24	
Few vs Many	II 24		16		24
Communication	II 22			28	17
Control Adequacy					
Rigid vs Flexible	II 30				24
Choatic vs Reasonable	II 23				

ITEMS CORRESPONDING TO TABLE 7

II 28	Teachers should make the decisions about what goes on in the classroom.
II 24	Everyone, no matter who, should have his say about things in class.
II 22	Pupils should work with all class members not just special friends.
II 30	There should always be regular daily assignments in class.
II 23	Pupils have a duty to help keep order.

No items are negative and all but three of the ten possibilities are related.

TABLE 8

Norms: Intercorrelations of Group Norms

		I 51	I 49	I 55	I 50
Concentrated					
Responsibility	I 54		14	24	26
Few vs Many	I 51				22
Communication	I 49				25
Control Adequacy					
Rigid vs Flexible	I 55				19
Chaotic vs Reasonable	I 50				

ITEMS CORRESPONDING TO TABLE 8

I 54 Teachers should make the decisions about what goes on in the classroom.

I 51 Everyone, no matter who, should have his say about things in school.

I 49 Pupils should work with all class members not just special friends.

I 55 There should always be regular daily assignments in class.

I 50 Pupils have a duty to help keep order.

Again we see less coherence, although all the relationships which do occur are positive and better than 1% level of significance. Not presented are the intercorrelations of the self and group norms. There are about as many negative as positive correlations overall.

Of the 5 sets of common individual and group items, the only item where the pupils feel the group does not have a value similar to their own is that "Pupils should work with everybody, not just their friends." Otherwise pupils see others with views substantiating their own. While there are a sprinkling of significant relationships between the norms and content social relationship items, these are haphazzard rather than in any suggestive patterns.

DEVELOPMENTAL CHANGES: SOCIAL STRUCTURE

The question of power dispersal in the group is as one might anticipate. The youngest children see the source concentrated in the teacher and a few peers more than do the older pupils - and significantly so. If one looks at the other four grades, grade five and seven pupils see their classes as having more dispersed control spread out over more members with less dominance by a few and/or the teacher. Grades nine and eleven reverse this and move toward the centrality found in grade three.

The control adequacy includes three sub areas. One is a degree of flexibility, in task selection and rate. Two is the firmness and acceptance of the control level. Three is knowing what the expectations are. While the differences between grades are not impressive, grade three is significantly more positive about the control adequacy. This drops with the fifth grade and then increases until by the eleventh it is not appreciably different from three.

In the norms which cover all social structure aspects, it is interesting to note that pupils always see themselves as more positive than they see their fellows. The third grade self norms are significantly lower than any other grade on self norms. There tends to be a gradual build-up over the grades. Girls have the edge on boys in self norms but this does not maintain when they project to the group. What this all suggests is that the expressed norms for pupils tend to anticipate more self-expression, more control and more expectation for clarity with age. They put, or say they put, somewhat higher demands on how they wish their classes to be. They also see their fellows as reflecting this increased expectation, but always at a slightly less

TABLE 9

SOCIAL STRUCTURE INDEX: AGE AND SEX BY GRADE

Grade		N	Social Structure Index		Concentrated vs Dispersed		Control Adequacy		Self Norms		Group Norms	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
III	B	41	32.88	3.40	13.61	2.35	19.27	2.38	13.05	2.00	12.93	2.45
	G	41	33.29	4.00	13.78	2.30	19.51	3.24	13.00	1.95	11.90	2.14
	T	82	33.09	3.75	13.70	2.33	19.39	2.84	13.02	1.98	12.41	2.36
V	B	51	33.37	9.26	16.06	2.84	17.31	2.73	13.92	2.31	12.71	2.38
	G	48	32.81	3.33	16.27	2.63	16.[illegible]4	2.75	14.19	2.11	12.65	2.29
	T	99	33.10	3.85	16.16	2.74	16.94	2.76	14.05	2.22	12.68	2.33
VII	B	49	33.49	3.68	15.98	2.68	17.51	3.06	14.08	2.16	12.86	2.52
	G	35	33.43	4.60	16.46	2.33	16.97	3.36	15.11	1.62	13.54	2.26
	T	84	33.46	4.09	16.18	2.55	17.29*	3.20	14.51	2.02	13.14	2.44
IX	B	35	34.77	2.84	15.66	2.44	19.11	2.15	14.80	2.08	13.63	1.97
	G	45	33.80	4.25	15.13	2.38	18.67	2.84	15.02	1.98	13.84	1.60
	T	80	34.22	3.73	15.36	2.42	18.86	2.57	14.92	2.03	13.75	1.78
XI	B	50	32.96	9.52	14.94	2.95	18.02	3.39	14.40	2.00	13.68	2.03
	G	35	33.57	4.80	14.86	2.65	18.71	3.35	15.46	2.02	13.74	2.36
	T	85	33.21	4.65	14.91	2.83	18.31	3.39	14.84	2.07	13.71**	2.17
Total												
	B	226	33.43	3.91	15.29	2.83	18.51	2.93	14.04	2.19	13.14	2.33
	G	204	33.36	4.22	15.31	2.65	18.05	3.32	14.51	2.14	13.10	2.29
	T	430	33.40	4.05	15.30	2.75	18.10	3.11	14.26	2.18	13.12	2.30
Possible Range			13 - 52		6 - 24		7 - 28		5 - 20		5 - 20	
Actual Range			22 - 49		6 - 23		9 - 28		8 - 20		6 - 20	

Significant Differences 01 ⟷
05 ——

* 7-9 Significant at 1% level but F test 5 %

**3-9 Significant 1% level but F test 1%
5-9 Significant 1% level but F test 5%

intense level than they see themselves. It is interesting that the total Social Structure Index mean is within one point above the center of the scale: the sub-dimensions also all average within a point. Since the items from the pretest were selected for spread and normal distribution, this is, of course, as expected.

The norm tables are again seen necessary to take into account the grade differences on the sub-scales. When the total index is used, grade norms are not necessary because there is the compensation of one sub-factor going up when the other goes down making total grade scores never significantly different.

THE SOCIAL CLIMATE COMPLEX

Social Climate The social climate index relationships contain 11 items plus 6 norm items. There are 22 significant correlations out of 55 possible ones in the items exclusive of the norms.

Teacher as a person items show relationships to the cooperative items and general climate but only one internal within the set. I-60 which has to do with competition over marks has little interrelationship. No relationships show with self imvolvement in the class.

There is only one internal relationship within the competitive-cooperative set, but all are related to I-11, feeling a part of the class. I-5 also stands quite alone, this being an item regarding participation in the class activity.

It should be remembered, the items were selected originally for independence or mild relatedness in the first place which accounts for the general low level of the correlations. With this spotty though positive showing, it will be most interesting to study the factor analysis.

Norms The only impressive thing about the social

TABLE 10

INTERCORRELATIONS: SOCIAL CLIMATE ITEMS

		I 9	II 2	II 3	II 4	I 6	I 7	I 60	I 11	I 5
Acceptance Given	I 35									
	I 36									
General Social Climate	I 8	19	11	11		22	21			16
	I 9		16	27	10	37	35		16	
Teacher as Person	II 2			23		32	19			
	II 3					18	24			
	II 4							12		
Competetive - Cooperative	I 6						33		14	
	I 7								18	
	I 60								12	
Self Involvement	I 11									
	I 5									

ITEMS CORRESPONDING TO TABLE 10

I 35
I 36 Sociometric

I 8 When I am ready for the next grade, or to begin a new class: (I would like most all of my classmates to go with me. I would like some of my classmates to go with me. I would like a few of my classmates to go with me. I would not like any of my classmates to go with me.)

I 9 Some classes are very friendly and others are not. How friendly are the pupils in this class? Classmates are always friendly. Classmates are usually friendly. Classmates are sometimes unfriendly. Classmates are often unfriendly.

II 2 A person who really understands kids my age.

II 3 A person to talk to when you are unhappy.

II 4 A person who gets angry.

I 6 If I had a problem in my class I think: (Many of my classmates would help me. Some of my classmates would help me. A few of my classmates would help me. Hardly any of my classmates would help me.)

I 7 If I didn't do well on a test, my classmates: Would try to make me feel better about it. Wouldn't pay any attention. Would just be glad it didn't happen to them. Might laugh at me for doing poorly.

I 60 In this class no one wants to tell you anything for fear you will get better marks than they get.

I 11 How much are you really a part of this class? Much less than other members of the class. Not quite as much as the other members of the class. More than the other members of the class.

I 5 When the class is discussing things, what do you usually do. Think about other things you would rather be doing. Just say something once in a while Tell your ideas often. Offer ideas whenever you can.

climate norms is the lack of relationship again.

TABLE 11

Intercorrelations: Self Social Climate Norm Items

		II 15	II 16
General Climate	II 17		10
Teacher as Person	II 15		
Competitive - Cooperative	II 16		

ITEMS CORRESPONDING TO TABLE 11

II 17 It is important to try to be friendly with every member of the class.

II 15 It is better to be friendly with classmates than with the teacher.

II 16 Pupils should help classmates who do not understand the classwork.

Upon examination, it is obvious why there is no relationship between the other two items and II-15. While pupils do not see a contest between friendliness to pupils and teachers, they are not related either.

TABLE 12

Intercorrelations: Group Social Climate Norm Items

		I 42	I 43
General Climate	I 44	13	
Teacher as Person	I 42		-20
Competitive vs Cooperative	I 43		

ITEMS CORRESPONDING TO TABLE 12

I 44	It is important to try to be friendly with every member of the class.
I 42	It is better to be friendly with classmates than with the teacher.
I 43	Pupils should help classmates who do not understand the classwork.

In the group norms, the only surprise is that friendliness toward teachers and pupils as seen in others is coherent, but helping pupils reverses. Helping other pupils apparently is a teacher type activity. This cast doubt upon the meaning which can be derived from these norm items, but again we will examine the factoring results.

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SOCIAL ACCEPTANCE: THE MEASURE AND DEVELOPMENTAL PATTERN

The measurement of social acceptance used here is not the usual sociometric. There are two reasons for this. On one hand, many students receive a relatively high degree of acceptance from many peers, the intensity of which is distorted when only a few choices are permitted. On the other hand, many pupils give acceptance to appreciable degrees, to many of their classmates, and the intensity of their first choices implied by the "selected three" criterion belies the meaning of their warmth for the larger group. For this reason a saturation sociometric device was selected, each pupil being rated by each classmate and each pupil's "giving" being assessed too. These are, of course, totally from the same data, but the configurations may be different. All pupils may give to one, or each pupil may give to several. That is to say, the amount of given and received acceptance must be equated, but the patterns may vary.

There is a sex difference problem here. Since, over the long pull, the number of boys and girls will be about equal in larger samples this matter concerns the individual teacher more than a little where the classroom sex ratio may favor one or the other. A separate study of sex patterns of response is contemplated to compare this type of sociometric with the selected choice relative to age differences. The means reported here were obtained by selecting at random 15 boys and 15 girls from each grade. Since these are not all from one classroom population, the given and received are not necessarily equated. The curves for giving are interesting. Boys start higher and drop until grade seven when they begin to increase. Each sex ends close to the starting with "giving" between grade three and nine being equal. Both boys and girls "received" follows the girls "giving" with the low point at five, and a gradual increase until nine again about reaches three.

TABLE 13

SOCIOMETRIC: AGE AND SEX BY GRADE

GRADE		N	GIVEN MEAN	GIVEN SD	RECEIVED MEAN	RECEIVED SD
III	B	15	30.37	5.16	28.81	5.74
	G	15	29.71	5.23	30.64	6.04
	T	30	30.04	5.20	29.73	5.94
V	B	15	26.93	6.06	24.87	4.90
	G	15	24.48	4.17	25.93	4.88
	T	30	25.70	5.37	25.40	4.92
VII	B	15	24.53	7.47	27.82	4.32
	G	15	28.53	5.22	27.57	3.76
	T	30	26.53	6.35	27.64	4.09
IX	B	15	27.43	3.66	27.31	4.32
	G	15	28.53	4.09	29.56	3.60
	T	30	27.89	4.53	28.43	4.14
XI	B	15	30.14	3.84	29.63	3.57
	G	15	29.35	4.33	30.05	4.17
	T	30	29.74	4.15	30.07	3.87
TOTAL						
	B	75	27.88	5.80	27.69	5.82
	G	75	28.08	5.03	28.84	4.92
	T	150	27.98	5.45	28.26	4.97

DEVELOPMENTAL CHANGES: SOCIAL CLIMATE

There are three sub parts to the Social Climate Index and a separate dimension for sociometric acceptance. The Social Climate Index is concerned with, at the high end, a learning climate characterized by cooperative peer actions, an understanding and accepting teacher and peers, and a sense of being a part of the class group or group attractiveness as it is sometimes termed. In all instances, the third grade was most positive, with the social climate gradually decreasing over the age span, with the decrease being significant in several instances. The mean for girls is consistently slightly higher than the boys, and the standard deviation for the boys is larger suggesting a greater range in their style of responses. The means are somewhat higher than the center of the scale. In the way things ought to be, the self norms, there are no significant differences in age means. Girls again usually always have slightly higher mean scores. Apparently the way school should be in this regard does not change, but the values they see held by their fellow students drops significantly after grade three and unevenly after that. The group norms, except for grade three again are significantly lower than the self norms, although the meaning of this with significant F's in some cases is open to question. The means are lower than the midpoint of the scale.

TABLE 14

SOCIAL CLIMATE INDEX: AGE AND SEX BY GRADE

Grade		N	Social Climate Index		Self Norm*		Group Norm	
			Mean	SD	Mean	SD	Mean	SD
III	Boys	41	28.29	3.44	9.56	1.75	9.44	1.89
	Girls	41	29.00	3.44	9.76	2.03	9.24	2.02
	Total	82	28.65	3.46	9.66	1.90	9.34	1.96
V	Boys	51	26.98	3.49	9.47	1.84	8.73	1.56
	Girls	48	27.31	3.30	9.81	1.56	8.90	1.72
	Total	99	27.14	3.40	9.64	1.72	8.81	1.64
VII	Boys	49	27.53	3.91	9.39	1.88	9.06	1.85
	Girls	35	28.86	3.37	9.80	1.47	8.57	1.73
	Total	84	27.25	3.71	9.56	1.73	8.86	1.81
IX	Boys	35	26.46	3.56	9.91	1.40	8.57	1.66
	Girls	45	26.91	3.39	9.69	1.30	7.98	1.57
	Total	80	26.71	3.48	9.79	1.35	8.24	1.64
XI	Boys	50	25.38	3.81	9.14	1.65	7.82	1.81
	Girls	35	26.57	3.70	10.03	1.23	9.31	1.58
	Total	85	25.87	3.81	9.51	1.55	8.44	1.87
Total								
	Boys	226	26.90	3.79	9.46	1.75	8.70	1.84
	Girls	204	27.36	3.52	9.81	1.55	8.78	1.80
	Total	430	27.12	3.68	9.63	1.67	8.74	1.82
Actual Range			15-39		5-12		4-12	
Possible Range			10-40		3-12		3-12	

* Significant Differences F Test Only III-IX, III-XI, V-IX, VII-IX
Significant Differences at 5% ———
Significant Differences at 1% ⟷

TABLE 15

MENTAL HEALTH: SIGNIFICANT INTERCORRELATIONS

F Mental Health		II 14 R	II 7	II 9	II 10	II 11	II 8 R	II 12	I 10 R	I 61	I 63	II 5 R	II 6 R	I 62	I 64	I 65 R
1 Learning Mental Health																
Liking Work	I 13	27	14					17		22	15		12	17	23	20
	II 14		22		21	11		22		22				13		24
Test Anxiety	II 7			44	47	33	15	43							15	
	II 9				42	27		33			11				10	
School Anxiety	II 10					35	16	46			10			10	16	
	II 11						10	39		12	13			12	19	
Fear of Inadequacy	II 8							22	12	11	13					
	II 12									22		14	19	22	24	11
2 Social Milieu Social Structure	I 10										25	12	12	17	14	12
	I 61										17			25	34	17
Peer Acceptance	I 63											10	11	23	19	11
	II 5												33	17		
	II 6													10		19
Teacher Acceptance	I 62														30	
Class as a Whole	I 64															19
	I 65															

ITEMS CORRESPONDING TO TABLE 15

I 13 Do you really like to do the work in this class.

II 14 School work is more fun than not fun.

II 7 Do you worry before you take a test.

II 9 After you have taken a test, do you worry about how well you did on the test.

II 10 Do you worry when the teacher says that she is going to ask you questions to find out how much you know about a lesson.

II 11 When you think you are going to be called on by the teacher, do you get a funny feeling in your stomach.

II 12 Do you worry about being able to do the work in this class.

II 8 Do you feel the work in this class is so easy you can do it wothout any worry.

I 10 In this class, I have a chance to express my own ideas.

I 61 I feel there are too many rules.

I 63 I get bothered about kids talking behind my back in this class.

II 5 The way I am included in the group.

II 6 How friendly this class is.

I 62 This teacher upsets me by things he does.

I 64 Just thinking about this class makes me sick.

I 65 Some classes are places you like to be, some are not, I like being in this class.

THE MENTAL HEALTH COMPLEX

Of the total 16 Mental Health items, exclusive of the 7 norm items, there are 48 significant correlations out of the 170. Four of the 48 correlations are negative. While there is considerable independence, there is also indication of some overall coherence.

Mental Health re Learning There are two non-anxiety items in the learning portion of the Mental Health Index. As would be expected (when direction is recognized) pleasure in the class is related to the lack of anxiety.

When the anxiety items are considered as a group, all but one of the possibilities are interrelated, some substantially. It will be remembered that these items go partly back to Sarason's test of school anxiety. This group should result in a well integrated dimension. There are 28 significant correlations of the 64 possible; three are negative.

Mental Health re Social Milieu The Mental Health items related to the milieu are not up to the consistency of the anxiety items, but are quite well interrelated. All but seven of the possible relationships are significant and only one is negative. Apparently the class where pupils wish to be is not equated with the class which is more friendly. There is no ready explanation for this single negative relationship.

Norms The norm items overall tend to be independent. None of the items in the self portion are interrelated and thus no table is presented.

NORM ITEMS: MENTAL HEALTH

II 18 It is normal to get worried over tests and your school work.

II 20 If kids worry about school, they shouldn't admit it to other pupils.

II 21 School is a place where you can be happy and enjoy yourself.

The group norms show two significant relationships.

TABLE 16

Correlations: Group Mental Health Norms

Learning Mental Health		I 45	I 47	I 48
Liking Work	I 41	10		26
Test Anxiety	I 45			
School Anxiety	I 47			
Social Milieu				
Class as a Whole	I 48			

ITEMS CORRESPONDING TO TABLE 16

I 41 School work is more fun than not fun.

I 45 It is normal to get worried over tests and your school work.

I 47 If kids worry about school, they shouldn't admit it to other pupils.

I 48 School is a place where you can be happy and enjoy yourself.

The fact that these norm items do not show much consistency and are seldom related to the parallel content item they are supposed to reflect raises more doubt about the meaning of self and group norms in the pupil's perception. Since these are not negatively related, perhaps they still will produce useful information but the operation of the norm items is not like the item patterns in general.

DEVELOPMENTAL CHANGES: MENTAL HEALTH

There are many concepts regarding the nature of classroom mental health. In this study it is considered to be a reaction about given classroom conditions rather than the conditions themselves. That is, regardless of the actual state of affairs of strict or relaxed discipline, how does the pupil feel about whatever the state of discipline is. This frees mental health from being a debatable description of a given state of affairs and relates it to a state of internal being. The high end of the scale is a state of comfort and satisfaction with the conditions as the pupil perceives them. The low end is a state of tension, anxiety or unhappiness regarding the situation.

There are two sub parts of this Index. The first has to do with learning, and is the satisfaction with the learning aspects, liking the work, being free of school anxiety and fears of inadequacy. The second is satisfaction with the social milieu. Here the issue is contentment with the social structure, and the acceptance from peers and teacher.

The only significant social milieu grade differences are grade eleven vs nine, seven and five, with the grade eleven being favored. In the learning sub portion there is a significant drop from the three to all others. Beyond this, the dimension drops from five to nine, with recovery at eleven, much like other dimensions. The overall mental health index, of course, follows the same pattern with the big drop after three, but a gradual diminishing from five through nine until recovery starts at eleven. In grades three and five, girls have the advantage: in all others the boys appear to be more satisfied with the status of affairs.

The self norms are lowest at grade seven while the major difference in the group norms comes between three and all others. It is interesting that young children see others as more desirous of security than they are. The majority of the pupils put themselves at about the midpoint or above on the possible scale range while they see others as slightly below the scale midpoint. They seem to feel they put a slightly higher value on the elements of mental health than do their fellows when they think in terms of how things should be.

TABLE 17

MENTAL HEALTH INDEX: AGE AND SEX BY GRADE

Grade		N	Mental Health Index		Social Mileau		Self Norms		Group Norms		Learning Mental Health	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
III	B	41	48.15	5.03	23.93	3.04	8.12	2.07*	10.78	2.34	24.22	3.67
	G	41	49.02	6.24	24.51	3.77	7.83	1.89	11.24	2.16	24.51	3.92
	T	82	48.59	5.69	24.22	3.44	7.98	1.99	11.01	2.27+	24.37	3.80
V	B	51	43.45	5.67	22.73	3.60	7.25	1.75	9.76	2.26	20.73	3.71
	G	48	45.06	5.01	24.42	2.91	7.13	1.79	9.48	2.15	20.65	3.36
	T	99	44.23	5.42	23.55	3.39	7.19	1.77	9.63	2.21	20.69	3.55
VII	B	49	44.18	5.78	23.55	3.11	6.86	2.05	9.65	2.12	20.63	4.09
	G	35	42.51	7.87	23.57	4.26	7.17	2.09	9.77	2.67	18.94	4.32
	T	84	43.49	6.78	23.56	3.63	6.99	2.07**	9.70	2.37++	19.93	4.27
IX	B	35	43.14	5.70	23.43	3.16	8.00	1.59	9.54	1.84	19.71	4.13
	G	45	42.60	6.49	23.38	3.88	7.56	1.53	9.29	1.88	19.22	3.92
	T	80	42.84	6.16	23.40	3.59	7.75	1.57	9.40	1.87	19.44	4.02
XI	B	50	45.50	6.01	24.86	3.11	8.24	1.52	9.64	1.71	20.64	3.87
	G	35	44.66	5.61	24.51	3.08	8.14	1.66	10.26	1.95	20.14	3.74
	T	85	45.15	5.86	24.72	3.10	8.20	1.58	9.89	1.83	20.44	3.82
Total												
	B	226	44.87	5.93	23.70	3.31	7.66	1.89	9.86	2.12	21.16	4.16
	G	204	44.81	5.46	24.08	3.62	7.54	1.85	9.98	2.60	20.73	4.33
	T	430	44.84	6.30	23.88	3.47	7.60	1.86	9.92	2.20	20.96	4.25
Possible Range			16 - 64		8 - 32		3 - 12		4 - 16		8 - 32	
Actual Range			26 - 59		13 - 31		3 - 12		4 - 16		10 - 31	

Significant Differences ⟷ 01%
—— 05%

*3-9, 3-11 Significant F test 5% level.
**7-9, 7-11 Significant F and T tests.
+3-11 Significant T and F tests.
++7-9, 7-11 Significant F tests.

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Chapter III

RESULTS OF THE FACTOR ANALYSES OF THE CLASSROOM QUESTIONNAIRE

The problem inherent in factoring children's responses to a classroom is that one is faced with the variety of Gestalts which are in fact in classrooms rather than the theory suggested patterns. In a recent study of classroom operations by teachers themselves, the same thing is revealed. There are a few stereotyped "poor" teacher behaviors, but in general what any teacher does is so much a mixture that it lacks the clarity of design which theoreticians often imply. Also, since the pupils respond to the impact of various aspects of a classroom as it strikes them, they put together responses on an internal basis, even when one selects questions which ought to reduce such mixture and produce clear sets. Dunn has shown that pupils respond with approximately the same factors over the various grades to questions either identical to or of a similar nature to those used in the present study, but there are differences in the clarity of various dimensions. Our pupils only partially responded in keeping with the theoretical positions we had. Their pattern of responses produced some single dimension factors but mixtures were far more typical.

It is possible to use the dimensions apriori as indicated with the tables and norms provided and discussed in the previous section or one can consider the dimensions as theoretical concepts to be checked out against the findings of a total and series of sub-factor analyses. Since Dunn had found, in relationship to the previous classroom items, that they could be reduced considerably by factor analysis, this option seemed desirable to explore. He held that the way pupils see the world is not always the way theoreticians would structure it. Also, since there were separate factors, the material did not represent just one global set about classrooms.

Dunn had also found that the factors replicated quite consistently over the grade levels. For the present study, in which the mental health and learning indexes contained less uncertainty, the whole structure of social climate-social structure, useful though it may be on a theoretical basis, certainly involves subtle differentiations which are even difficult to define. It is well to remember that the present bank of questions contains some of the previous items and new ones as well, and furthermore, represents a somewhat different theoretical interest.

To jump ahead of the story a bit, the total factor analysis of all items so altered certain suppositions about both the social structure and social climate, that the question arose, might this be at least partially a consequence of the conglomerate combination of all items? What would happen if the four sets of items making the indexes were subject to less complicated series of factor studies? This would of course introduce variation. And yet the essential finding of the total factor analysis could be thus substantiated and add weight to any decision to redesign the dimension structure on the basis of results rather than hold to a theoretical position which did not appear to be in keeping with the way children perceived their classroom conditions. In each instance we present first the total factor results of the area from all items and then relate these to the findings from the sub-factoring of the special area items only.

LEARNING

Sub-Factoring of Learning Items Only First, let us examine what takes place when only the items in the original theoretical learning position are factored as a unit. We see six factors, almost identical with the original theory. It should be noted as is indicated several items have their highest loadings in factors having only one or two items of significant weight. If one ignores these, the dimensions proposed by the theory fit exactly as can be seen under the area of original assignment of items. This means that those who use the questionnaire have a choice of scoring procedures to a degree. If one wishes to use only the learning portion these scores and the norms provided maintain integrity. Parenthetically, since the learning theory was based largely upon Guilford's model, it is interesting to see how well these held together.

Finally, it will be noted that loadings on total scores have been included. Complementary loads high on Total Learning Index, combined intellectual and of course, very high on Complementary. Involvement loads high only on itself. Reinforcement has a high loading on the Learning Index but much higher on itself. Conventional follows a similar pattern. Each of the norm dimensions are high only on their total scores. It is also noted here that the norm items divide into group and self, and are not related to the dimensions they were expected to reflect.

Total Factors The combination of all items results in factors some of which overlap but some of which are new. Table 18 presents the new factors for the various items along with the sub-factor designations already discussed as well as those appearing from other sub-factor designations to be examined later. The four factors combine learning items with those from all other indexes. The additions to complementary come from reinforcement and conventional. I-21, "filling in the blank" changes from conventional to complementary. It was seen appearing with other conventional items in the sub-factoring reported. The two reinforcement

TABLE 18

LEARNING TOTAL AND SUB-FACTORING COMPARED

Total Factoring Designation	Item	Factor Loading	Sub-Factor Loading	Sub Factor Designations
1 Motivation	I 12	.51	.73(2)	Learning Involvement
(13)	I 15	.46	.76(2)	Learning Involvement
	I 5	.50	.37(1)	Social Climate - General Social Climate
	I 13	.55	.36(2)	Mental Health
	II 14	.40	.53(10)	Mental Health (By itself, no other high loading)
	I 65	.35	.64(2)	Mental Health
Dropped Different Concept	I 30	.27	.24(1)	Social Structure (General)
2 Teacher as learning Facilitator	I 56	.51	.51(4)	Learning - Reinforcement
	I 16	.40	.52(4)	Learning - Reinforcement
	I 57	.39	.63(12)	Learning - By itself, (Loads 46 on (2) and .20 on (4)
(7)	I 24	.24	.29(5)	Learning - Conventional
	I 58	.49	.47(1)	Social Structure - General Social Climate
	I 68	.39	.38(3)	Social Structure - Factor 3 not named.
	I 59	.36	.35(3)	Social Structure - Factor 3 not named.
3 Conventional Learning Processes	I 28	.41([illegible])	.45(5)	Learning Conventional
	I 25	.32	.43(5)	Learning Conventional (Higher loading .46 by itself (15)
(5-8)	I 18	.46	.37(9)	.27(5) Second High Loading
	I 22	.40	.58(9)	.41(1) " " Complementary (Note Highest Loading Paired (9)
	I 20	.24	.35(5)	Learning Conventional
4 Complement-ary Learn-ing Processes	I 27	.51	.64(1)	Learning - Complementary
	I 17	.39	.36(4)	Learning - Reinforcement
	I 19	.39	.36(4)	Learning - Reinforcement Loads highest .54 on (1)
	I 26	.33	.56(1)	Learning - Complementary
(1)	I 23	.29	.56(1)	↓ ↓
	I 29	.29	.43(1)	Loads highest .52 on (14)
	I 31	.27	.47(1)	Social Structure - General Social Structure
	I 21	.24	.45(5)	Learning - Conventional

TABLE 19

LEARNING: SUB FACTORING

(Single Item or Pair Factors Not Listed)

New Sub-Factoring	Item	Loading Factor	Area of Original Assignment of Item
Complementary	I 22	.41	Complementary (Highest Loading .58 (9) with I 18 .37 (9))
(1)	I 23	.56	Complementary
	I 26	.56	Complementary
	I 27	.64	Complementary
	I 29	.43	Complementary (Highest loading .52 (14) by itself)
Combined Intellectual		.62	
Complementary Score		.92	
Total Learning Score		.51	
Involvement	I 12	.73	Involvement
(2)	I 15	.76	Involvement
	I 57	.46	Involvement (Highest Loading .63 (12) by itself)
Involvement Total Score		.91	
Reinforcement	I 14	.44	Reinforcement (Highest loading .45 (13) with I 20 (45)
(4)	I 16	.52	Reinforcement
	I 17	.36	Reinforcement (Highest loading .46 (10) by itself)
	I 19	.36	Reinforcement (Highest loading .54 (11) by itself)
	I 56	.51	Reinforcement
Total Learning Score		.48	
Reinforcement Total Score		.89	
Conventional	I 18	.27	Conventional (Highest loading .37 (9) with I 22 (.58)
(5)	I 20	.35	Conventional
	I 21	.45	Conventional
	I 24	.29	Conventional
	I 25	.43	Conventional
	I 28	.45	Conventional
	I 69	.25	Conventional
Total Conventional Score		.48	
Total Index Score		.57	
Group Norms	I 40	.47	Group Norm Involvement
(6)	I 46	.62	Group Norm Involvement
	I 52	.61	Group Norm Conventional
	I 53	.64	Group Norm Complementary
Total Group Norm Score		.89	
Self Norms	II 13	.44	Self Norm Involvement
(3)	II 19	.56	Self Norm Involvement
	II 25	.42	Self Norm Reinforcement
	II 26	.38	Self Norm Conventional
	II 27	.58	Self Norm Complementary
	II 29	.37	Self Norm Reinforcement
Self Norm Total Score		.87	

items are logical additions. One is the use of what is learned outside of class and the other is talking about what is learned outside of class. Both are complementary in nature. The I-31 from social structure is an item having to do with self decision which seems to have a quality similar to non conventional learning in the minds of the students. The conclusion from this examination is that these eight items comprise a usable dimension, complementary learning.

The six conventional items were combined from two factor clusters (5) and (8). While two of these items (I-25 and I-18) have their highest sub-factor loading in factors with only a pair and little else, I-18 has its second high loading in the conventional sub-factor. I-22 fits here in reverse as indicated since "several right answers" is nonconventional and the direction of this item is negative. (The reverse relationship also holds in the pairing in sub-factor 9.) It is concluded that this dimension, conventional learning processes, is a reasonable cluster for utilization.

The other two factors are more complex. First, motivation is much more involved than was originally expected. Six items retain a strong primary identification with this cluster. The two come from involvement as would be expected. From Mental Health come three items; two from mental health sub-factor (2), I-65 "a class where you like to be", I-13, "liking the classwork", and one from mental health sub-factor (10), II-14, "School work is fun." To this is added I-5 from Social Climate, which has to do with interest in participating in the class. All of these make theoretical sense and this 6 item cluster becomes the motivational dimension. I-30 was dropped because there is no way to interpret this item as in the same overall concept.

The significant change in the learning dimensions is a new combination having to do with the several procedures executed by the teacher to produce a stimulating learning situation. They are held together as a cluster because they have to do with the person responsible - the teacher. Of Course, this is logical to put together teacher functions rather than to find them in some discrete abstractions, for the teacher certainly creates "a" or "the" dominant influence in any classroom. This teacher complex includes: "checking on the work", "making things seem interesting and important", "asking how good the ideas are", "keeping firm order", "wandering off the track", "class behaves well even when the teacher is out of the room". Them make a reasonable grouping and will be entitled the dimension of teacher as a learning facilitator. Thus, the original learning processes of conventional and complementary are retained, reinforcement items are relocated, involvement expands to a broader motivational picture and the teacher as a facilitator in learning develops. These are the patterns identified by the pupils as they report on their classrooms.

While a person using only the block of items referred to learning originally might well use the norm data and standard score tables previously discussed, it would seem to be a dubious procedure if the whole questionnaire is employed. In such a case, the original divisions are obviously arbitrary and do not fit the factors as they turned out. When it comes to scores for the present research, the new factors will be utilized and norm tables developed for the banks of items in each dimension as well as the totals.

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SOCIAL STRUCTURE

Sub-Factors When it comes to the sub-factoring of the Social Structure Index, confusion is all that is clear. Group norm items and content items appear together for the first time as shown in sub-factors. (1) The self norm items are split into two sub-factors (4) and (5), and not grouped as expected. Sub-factors (2) and (3) demonstrate that the theoretical division into a vector of concentrated vs dispersed power and the notion of control adequacy does not accomodate pupil perceptions of the classroom environment. Item I-2 "stable or changed group committees" stood as the one high loading item except for norm items in a factor not shown on the chart.

It is difficult to justify the original Social Structure dimensions from these data. The sub-factor (1) has a high relationship to several total scores but this does not clarify the psychological nature of this conglomeration. One cannot readily identify the factors that have appeared in the sub-factors reported. If this area of classroom study is to be pursued, then more care must be given to a reasonable conceptual schema. The hope for a factor dealing with discipline as such had to be abandoned since these items dispersed into other dimensions. For reasons to be seen shortly, the sub-factor study of the Social Climate Index will be presented next.

SOCIAL CLIMATE

Sub-Factors One clear factor emerges in the social climate sub-factoring, generally accepting social climate (1). Again the items regarding the generally accepting Social Climate appear together in the original assignment of items and the total score has the highest loading. Otherwise items with single high loading factors predominate, and there are pairs where norms are included with one content

TABLE 20

SOCIAL STRUCTURE SUB-FACTORING (HIGHEST LOADINGS)

New Sub-Factor	Item	Loading	Area of Original Assignment of Item
Social Structure (1)	I 30	.24	Concentrated vs. Dispersed
	I 31	.47	Concentrated vs. Dispersed
	I 33	.82	Control Adequacy
	I 34	.78	Control Adequacy
	I 49	.71	Group Norm Concentrated vs Dispersed
	I 50	.51	Group Norm Control Adequacy
	I 51	.30	Group Norm Concentrated vs Dispersed
	I 54	.51	Group Norm Concentrated vs Dispersed
	I 55	.45	Group Norm Control Adequacy
	I 58	.47	Control Adequacy
Total Scores			
Control vs Dispersed		.85	
Control Adequacy		.73	
Self Norm		.64	
Group Norm		.82	
Factor (2)	I 32	.34	Concentrated vs. Dispersed
	I 66	.21	Control Adequacy
	I 67	.35	Control Adequacy
Index Total Social Structure		.67	
Factor (3)	I 2	.21	Concentrated vs Dispersed (Not high loading)
	I 3	.36	Concentrated vs Dispersed
	I 4	.46	Concentrated vs Dispersed
	I 59	.35	Control Adequacy
	I 68	.38	Control Adequacy
Factor (4)	II 22	.43	Self Norm Concentrated vs Dispersed
	II 28	.42	Self Norm Concentrated vs Dispersed
	II 30	.48	Self Norm Control Adequacy
Factor (5)	II 23	.42	Self Norm Control Adequacy
	II 24	.45	Self Norm Concentrated vs Dispersed

TABLE 21

SOCIAL CLIMATE SUB-FACTORING (HIGHEST LOADINGS)

New Sub-Factor	Item	Loading	Area of Original Assignment
General (1)	I 11	.30	General Social Climate
Accepting	I 5	.37	⇩ ⇩
Social	I 6	.51	
Climate	I 7	.52	
	I 8	.50	
	I 9	.43	Highest loading .46(4) is not related to any other General Social Climate
Social Climate Index		1.00	
Factor (2)	II 16	.77	Self Norm General Social Climate
Self Norm			
Total Score		.50	
Factor (6)	II 17	.72	Self Norm General Social Climate
Self Norm			
Total Score		.41	
Factor (3)	II 2	.79	General Social Climate - Teacher
Group Norm			
Total Score		.58	
Factor (4)	I 9	.46	General Social Climate
	I 43	.44	Group Norm General Social Climate
	I 44	.30	⇩ ⇩
	II 4	.41	General Social Climate
Factor (5)	II 15	.82	Self Norm General Social Climate
Self Norm			
Total Score		.61	
Factor (7)	I 35/36	.44	Social Acceptance - Sociometric
	I 42	.34	Group Norm General Social Climate
Factor (8)	II 3	.67	General Social Climate
Factor (9)	I 60	.77	General Social Climate

item, although the norms also are scattered. With this confusion in the simplified factoring using only items from this index one can predict that the total factoring of all items will show diffuseness in this index. In the sub-factoring we are left with one good dimension if it is replicated in the total factoring. The norm items will be discussed as a separate phenomena.

Total Factors From the sub-factors just presented, it is obvious that a jumbled picture will result from the two original indexes, Social Climate and Social Structure. They will be considered together in the total factoring because so little was left of either after the analysis. We were prepared for some erosion after the finding of certain items in these two with an affinity to the new learning factors, but the disintegration of these two Indexes was almost complete.

Even the two "factors" obtained from both indexes are difficult to make logical in all aspects, and as much for what did not appear as for what did appear. Why the sociometric-social acceptance (I-35/36) did not fit with factor 4 is difficult to account for unless this reflects the difference between what actually happens and what one thinks happens, a condition which will be explored later.

The rigid-flexible dimension broke down to a few items partly because items having to do with a teacher directed learning processes moved to the teacher stimulation complex reported under the learning factors. One group norm item loads highest .35 while it loads only .26 on the final group norm factor to be reported later. I-14 which loaded .37 here is "knowing for sure whether the work you do is right or wrong." There is a logic to this because it represents certainty as well as the intended clarity about tasks. However, it is a complex item with two meanings: one is certainty to be sure, but not always need certainty and

TABLE 22

SOCIAL CLIMATE: SOCIAL STRUCTURE TOTAL FACTORING

Highest Loading

Total Factor Designation	Item	Loading Factor	Sub-Factor Loading	Sub Factor Designations
6 Rigid vs Flexible (10)	I 34	.44	.78(1)	Social Structure General Social Structure
	I 33	.57	.82(1)	Social Structure
	I 40	.35	.47(6)	Learning - Group Norms
	I 14	.37	.44(4)	Learning - Reinforcement
	I 35/36	.59	.44(7)	Social Climate - Factor 7 unnamed.
Note:	These items were dropped since they contain a different concept.			
7 Generally Accepting Social Climate(4)	I 9	.58	.46(4)	Social Climate Factor (4) Not named
			.43(1)	General Social Climate (Second highest loading)
	I 6	.53	.51(1)	Social Climate
	I 7	.48	.52(1)	Social Climate
	I 8	.34	.50(1)	Social Climate
	I 11	.20	.30(1)	Social Climate Higher loadings in .26(2) and .24(10) but this remains the most logical identification. Both these factors were dropped.
Dropped (2) Factor not Named	I 11	.26		Put with (4) see above.
	I 42	.44		Norm item, dropped
	II 5	.19		Social Acceptance, above but not used; (sense of being included) loads .17 on (4), also loads .17 on (14) Mental Health. This confusion suggested dropping item,
Dropped (6) Factor not Named	I 2	.36		The other items in factor (6) were Norm Items. See Factors (9) and (11) for discussion.

rigidity be together. If this were the case, the loading would have been reversed, but as the direction now stands certainty and flexibility go together which is not as one would expect. Fortunately the two remaining items do load high, but this dimension, rigid-flexible, must be accepted as the weakest of the lot.

The generally accepting Social Climate is a clear factor. It appears in the same configuration as Social Climate sub-factor (.1) except for item I-5 which, as discussed, moved to motivation. I-9 "class friendliness" had its highest sub-factor loading with the social climate group norm items, and the second loading on the same sub-factor as all of the others. Thus this factor has both logical integrity and cluster relationship and the dimension of social acceptance is clearly useful. It is surprising that it is differentiated from the mental health factor (14) as clearly as it is.

The conclusion from examining the sub-factors as they appeared and now the total factors is that the original theory about social climate and social structure dimensions has little correlation with what aspects pupils put together as they perceive the classroom. While norms and developmental level data have been presented on the original theoretical basis, the final analysis will need to conform to the evidence here presented. It suggests caution concerning the way hypotheses are set up about these aspects of classrooms.

MENTAL HEALTH

Sub Factors The sub-factoring of the Mental Health Index items by themselves presented four clusters, two of which were clear and related to the original theoretical positions. All of the anxiety items remained together, and, except for "liking the work" which moved to motivation, are identical with what we shall later see in the total factors. The loadings of factor (1) with the Mental Health Index score and the Mental Health learning score are both high.

In the emotionally supportive classroom milieu we see the evolution of a strong factor in an important area of mental health. The norm items do not follow any clear pattern, being found in five sub factors not in the usual two. They are put together here for interest only since they did not factor out in any reasonable way. Now there were also six items as noted which constituted single high sub-factor loadings or combined with one other to make a couplet. These were not utilized.

Total Factors The Mental Health factors found in the total factor analysis maintain the profile of the sub-factor structure quite well, but with minor additions from Learning and Social Climate and major additions from Social Structure.

The anxiety factor is clear and strong, loadings are generally high and all from the expected sources. Here we have a dimension which can be used without uncertainty.

The second Mental Health factor is an unexpected combination. Rather than a cooperative accepting social climate found in total factor (4) which has to do more with work, this has to do with the emotional overtones which are present in the way people in the classroom behave. The Mental Health items are from the original mental health components of the milieu, and include such items as the following: "kids talking behind my back," "teachers who

TABLE 23

MENTAL HEALTH SUB-FACTORING (HIGHEST LOADINGS)

New Sub-Factor	Items	Loading	Area of Original Assignment of Item
Anxiety School, Test, Inadequacy	II 7	.71	Mental Health Anxiety, Test, School Inadequacy
	II 8	.29*	
	II 9	.58	⇓ ⇓ ⇓
	II 10	.73	
	II 11	.55	
	II 12	.69	
	II 14	.33*	Mental Health Liking Work
Mental Health Index Score	→	.75	
Mental Health Re Learning	→	.96	
Supportive Classroom Milieu	I 10	.31	Mental Health Social Milieu
	I 13	.36	Mental Health Liking Work
	I 61	.53	Mental Health Social Milieu
	I 62	.51	⇓ ⇓
	I 64	.64	
	I 65	.38*	
	II 5	.29*	
	II 6	.30*	
Mental Health Index Score	→	.62	
Social Milieu Score	→	.90	
Group Norms	I 41	.69	Liking Work
	I 45	.58	Anxiety - Test
	I 47	.58	Anxiety - School
	I 48	.52	Social Milieu
Mental Health re Group Score		.84	
Self Norms	II 18	.60	Anxiety - Test
	II 20	.80	Anxiety - School
	II 21	.71	Social Milieu
Mental Health re Self Score		.73	

* Items are not highest loadings in these factors. The high loading is in a single item high factor or a pair which were dropped.

upset me," "too many rules," and "class makes me sick." These are strong emotionally toned areas for the pupil. To these are added such concepts as the freedom to think for yourself and express yourself. The clarity of task aspects also appear here, "not getting mixed up." There is also the matter of a teacher who understands you and does not get angry. It is surprising that such an odd lot collection of items would cluster together with all of the opportunities for other relationships present but a common psychological core is evident here. The factor has been named emotionally supportive milieu, and the elements which make it come from several sources. With the many fairly high loadings and 12 items it should be a productive dimension.

When the items in the total factors are compared with those found when only the sub-factor analysis was made, several interesting observations are in order. It can be said that the two overall dimensions which have been indicated were also apparent in the sub-analyses. There are three items lost from the sub to the total. Item II 5 "the way I am included in this group" has no loadings of .20 in the total factoring and was dropped entirely. I-65 and I-13 both became part of the learning motivational factor (13) when given the total range of items for clustering. It could be said that the two overall dimensions which gave the theoretical orientation are apparent in the sub-analysis. For this reason, if only this section of the questionnaire were to be used, one might be justified in applying norms for the two major headings originally proposed. When the whole questionnaire is administered, this combination would not fit the conditions as revealed here.

It will accordingly be necessary to study developmental changes and to develop such norms as are necessary for these two new dimensions.

TABLE 24

MENTAL HEALTH TOTAL AND SUB FACTORING COMPARED

Total Factoring Designation	Item	Factor Loading	Sub-Factoring Loading	Sub-Factor Designations
(11) Anxiety	II 7	.70	.71 (1)	Mental Health Anxiety, Test, School Personal Inadequacy
Test, School	II 10	.64	.73 (1)	
Personal	II 9	.61	.58 (1)	⇩ ⇩ ⇩
Inadequacy	II 12	.56	.69 (1)	
(12)	II 11	.47	.55 (1)	
	II 8	.23	.29 (1)	(Highest loading .49 (8) by itself)
(12) Supportive	I 69	.35	.25 (5)	Learning - Conventional
Classroom	I 66	.44	.21 (2)	Social Structure - Factor not named.
Milieu (14)	II 4	.50	.46 (3)	Social Structure - Factor not named.
	II 2	.37	.21 (3)	Social Structure - Factor not named.
	I 60	.33	.77 (9)	Social Structure - Factor not named.
	I 63	.54	.33 (8)	Mental Health - Factor not named.
	I 62	.45	.51 (2)	Mental Health - Supportive Classroom
	I 61	.40	.53 (2)	Mental Health - Loads 41 on (13); best Concept alignment here however.
	I 64	.39	.64 (2)	Mental Health - Supportive Classroom.
	I 10	.35	.31 (2)	Mental Health - Not highest loading but other factor not useable.
	I 67	.25	.35 (2)	Social Structure - Factor not named.
	II 6	.22	.30 (2)	Mental Health - Supportive classroom.

Norms Since the norm items have already been discussed where they appeared in the various sub-factor studies, the only remaining matter is to examine what happens from the total factoring with all items included. Will the items be associated on a self vs group or on a content area basis?

There is not much doubt about two major clusters. The self-other dichotomy dominates over any content subdivisions. The 11 self norm items (9) which make up this complex are more than ample for this dimension. Five items were dropped because they spread over several factors.

The group norms contain 9 items all in factor (11). Six items are dropped here, again spread over several domains. This means that the norm items neither stuck with their content items nor totally associated with each other. It is a mixed picture.

The overall significant conclusion, however, is clear. Pupils see the norm items, by and large, as a pattern, first what they themselves think and second what they feel their classmates think. These are connected as a sort of overall halo. Students see certain of these items in general as having considerable interrelationship as we saw from the correlation tables - though the tendency is not universal it will be remembered. But they do seem to put together a stereotyped "goodness" dimension of a class as adults would see it and field the various items in packages, one for themselves and one for others.

Perhaps the most surprising thing is the lack of coherence in the mental health items in either the self or group norms. They simply do not combine with the others or even stand well by themselves as units. There is apparently a real problem for pupils in trying to identify both their own and peer's norms regarding attitudes about the properness of certain feelings. An example is "It is normal to get worried over tests and your school work." Eventually we

NORM ITEMS TOTAL AND SUB-FACTORING COMPARED

Total Factoring Designation	Items	Factor Loading	Sub-Factor Loading	Sub-Factor Designation (Original	
(14) Self	II 24	.52	.45(5)	Social Structure Concentrated vs Dispersed	
Norm	II 27	.54	.58(3)	Learning Conventional	(Note: (3) are learning
(9)	II 19	.48	.56(3)	Learning Involvement	self items)
	((II 13	.39	.44(3)	Learning Involvement))	
	((II 25	.35	.42(3)	Learning Reinforcement))	
	II 30	.26	.48(4)	Social Structure Control Adequacy	
	X((II 22	.33	.43(4)	Social Structure Concentrated vs Dispersed))	
	II 17	.43	.72(6)	Social Climate	
	II 23	.46			
	((II 29	.30	.37(3)	Learning - Reinforcement))	
	((II 16	.24	.77(2)	Social Climate))	
Items	II 28	.21	.42(4)	Social Structure Concentrated vs Dispersed	
Dropped, no	II 26	.35	.56(1)	Learning Conventional'	
common high	II 18	.44	.60(7)	Mental Health Anxiety	
loadings. ←	II 20	.37	.80(4)	Mental Health Anxiety	
	II 21	.52	.71(5)	Mental Health Anxiety	
	II 15	.37	.82(5)	Un-named	
(15) Group	I 46	.58	.62(6)	Learning Involvement	All (6) items are
Norms	X((I 52	.44	.61(6)	Learning Conventional))	group items
(11)	I 53	.48	.64(6)	Learning Complementary	
	I 51	.29	.30(1)	Social Structure Concentrated vs Dispersed	
	I 55	.38	.45(1)	Social Structure Control Adequacy	
	((I 49	.44	.71(1)	Social Structure Concentrated vs Dispersed))	
	I 44	.34	.30(4)	Social Climate Factor not named	
	I 50	.53	.51(1)	Social Structure Concentrated vs Dispersed	
	((I 43	.48	.44(4)	Social Climate Factor not named.))	
Items drop-	I 40	.26*	.47(6)	Learning Involvement	
ped, spread	I 54	.38	.51(1)	Social Structure Concentrated vs Dispersed	
over several	I 41	.30**	.69(3)	Mental Health Liking Work	
or other ←	I 45	.34	.58(7)	Mental Health Anxiety	
factors, no	I 48	.26***	.52(3)	Mental Health Social Milieu	
common high	I 47	.27	.58(9)	Mental Health Anxiety	
loading.	I 42	.49	.34(7)	Social Climate Factor Un-named	

Dropped Factor 3: * Highest loading, highest .35(10) Social Climate, also loads .26 on (3) a dropped factor

** Highest loading, .31(3), a dropped factor

*** Highest loading, .50(3), a dropped factor

(( )) So designated are dropped in order to get a reduced, representative and matched individual group set.

hope to subject the norm items to a separate study in order to really understand what is happening in responses in this area. There was little consistency in the self norm developmental means while in the group norms the only major change was the decrease between grades III and V. It may simply be that these conditions are not concrete enough in the setting to produce any coherent pattern in the minds of children. While we know they are responsive to the attitudes of others, they may not objectify these.

Since we have really but two useable norm factors, and intend only one scale, it seems reasonable to reduce the number of items. Of all the dimensions from the new factors, only the supportive social milieu mental health dimension has over 8 items. The selected six items each match for the group and individual, making comparisons more reasonable. They are also chosen to give a representative value set over the several dimensions the degree that this is feasible.

CONCLUSION

The overall outcome of the two factorings has been made clear by this time. Possibly the learning and mental health dimensions can stand as they were originally designed if teachers so desire to use them. However, since they accumulate items from the other Indexes, an advantage will be gained if the new factored dimensions are used since these incorporate items as they are responded to by pupils when the whole questionnaire is administered. When it comes to social structure and social climate, the failure to pattern into clusters fitting the theory is evident in the sub and total factors as revealed. When the new total factors are used, many of the items find their way into the new dimensions.

Norms are provided for both sets of dimensions, those produced from the total factor analysis will be employed in the final comparisons.

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DEVELOPMENTAL CHANGES FOR NEW DIMENSIONS RESULTING FROM FACTORING

The problem of grade level differences on the new dimensions is critical in connection with eventual norm tables as well as for evidence regarding trends, sex differences and the like. With a total N of 428, and some grade level sizes ranging from 98 to 80, one speaks with caution even though the pupil population was selected with a view toward representing a cross section. There is also the problem still present of the ability of third grade pupils to respond to these items at their level of sophistication. With these limitations in mind, the tables can be examined.

The obvious first point is the fact that, in almost every instance the Grade III has a most positive perception of school, and there follows a pronounced drop by grade V with a gradual build up through Grade XI. However the patterns are by no means identical.

In the motivation dimension, there is a high start with a gradual drop by Grade VII and some recovery by IX and XI. Sex differences are not significant and the difference between Grade III and all the others constitutes the only significant difference. The teacher as a facilitator of learning starts high, drops sharply and fluctuates up and down by the senior high level. Again the low point is junior high. These differences are significant. Conventional learning and complementary learning show a similar pattern with the decline hitting the low at Grade VII, recovery at IX, with a drop for XI again. The summated Learning Index has the same pattern as would follow. It would appear that Grade VII has the least satisfactory perception of the learning climate, and that there is again less satisfaction at the high school junior year.

The Social Climate conditions have no coherent pattern. The flexibility increases with grade level and the differences are significant. Social climate general acceptance starts high

TABLE (A)***

REVISED DIMENSIONS: AGE AND SEX BY GRADE

Grade		N	Motivation*		Teacher as Learning Facilitator		Conventional Learning Process		Complementary Learning Process		Learning Index	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
III	B	41	19.49	2.53	21.27	2.72	13.02	3.27	21.80	4.13	75.59	7.21
	G	41	19.76	2.85	21.80	2.39	13.12	2.65	22.22	3.77	76.90	6.23
	T	82	19.62	2.68	21.54	2.56	13.07	2.96	22.01	3.94	76.24	6.73
V	B	50	17.42	3.10	16.84	3.83	11.82	2.37	19.90	3.19	65.98	8.21
	G	48	17.54	3.45	17.23	3.14	10.88	2.16	19.67	4.51	65.31	8.65
	T	98	17.48	3.26	17.03	3.50	11.36	2.31	19.79	3.87	65.65	8.39
VII	B	49	14.90	1.98	14.80	2.68	10.29	2.14	17.80	2.92	57.78	6.12
	G	35	15.03	1.82	15.37	2.74	11.63	2.47	18.69	3.33	60.71	6.08
	T	84	14.95	1.91	15.04	2.70	10.85	2.37	18.17	3.11	59.00	6.24
IX	B	35	16.57	3.54	19.91	3.31	13.43	2.84	19.31	3.18	69.23	6.59
	G	45	16.69	3.12	19.44	2.91	13.13	2.31	19.44	3.67	68.71	7.11
	T	80	16.64	3.29	19.65	3.00	13.26	2.54	19.39	3.44	68.94	6.85
XI	B	50	15.86	2.81	16.62	2.99	11.68	2.60	18.46	3.00	62.62	8.08
	G	34	15.97	2.15	16.97	2.02	11.88	1.92	18.74	3.09	63.56	6.61
	T	84	15.90	2.55	16.76	2.63	11.76	2.34	18.57	3.02	63.00	7.49
Total												
	B	225	16.92	3.18	17.63	3.86	11.92	2.83	19.38	3.53	65.70	9.41
	G	203	17.10	3.21	18.28	3.47	12.13	2.47	19.81	3.94	67.32	8.91
	T	428	16.92	3.23	17.94	3.79	12.01	2.71	19.58	3.88	66.47	9.75
Possible Range			6 - 24		7 - 28		5 - 20		8 - 32		26 - 104	
Actual Range			8 - 24		9 - 26		5 - 19		9 - 32		45 - 92	

Significant at 05% ⟷ Significant at 01% ——

Significant F Test * 5 & 7, 5 & 11, 7 & 9, 7 & 11.

*** Revision of Deminsions included in Tables 4,14,9,17.

TABLE (B)***

REVISED DIMENSIONS: AGE AND SEX BY GRADE

Grade		N	Emotionally Supportive Milieu		Mental Health Index		Rigid vs Flexible		Generally Accepting Social Climate		Anxiety	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
III	B	41	37.29	4.41	55.54	5.56	4.20	1.57	14.90	2.64	18.24	3.28
	G	41	37.22	5.85	54.90	7.23	4.22	1.75	15.17	2.56	17.68	3.54
	T	82	37.26	5.15	55.22	6.42	4.21	1.65	15.04	2.59	17.96	3.40
V	B	50	35.58	4.38	50.76	4.48	4.74	1.51	13.10	2.89	15.18	2.65
	G	48	36.19	4.12	51.23	5.24	4.17	1.40	13.29	2.96	15.04	2.90
	T	98	35.88	4.25	50.99	4.85	4.46	1.48	13.19	2.91	15.11	2.77
VII	B	49	34.67	3.34	50.71	4.01	4.73	1.59	13.18	2.12	16.04	2.57
	G	35	34.40	3.81	50.43	4.75	4.69	1.66	13.26	2.09	16.03	2.39
	T	84	34.56	3.52	50.60	4.31	4.71	1.61	13.21	2.09	16.04	2.48
IX	B	35	37.09	5.72	51.23	8.23	5.43	2.88	14.60	2.30	14.14	3.32
	G	45	36.38	5.65	50.09	7.53	5.33	2.65	14.80	2.40	13.71	2.97
	T	80	36.69	5.66	50.59	7.81	5.38	2.73	14.71	2.34	13.90	3.11
XI	B	50	33.62	4.33	47.88	6.50	6.76	3.38	13.10	2.24	14.26	2.91
	G	34	33.62	4.38	47.47	6.07	6.50	3.50	13.38	2.20	13.85	2.54
	T	84	33.62	4.32	47.71	6.29	6.65	3.41	13.21	2.22	14.10	2.75
Total												
	B	225	35.49	4.59	51.05	6.23	5.20	2.47	13.68	2.56	15.56	3.24
	G	203	35.70	4.99	50.95	6.66	4.92	2.40	14.01	2.61	15.25	3.25
	T	428	35.59	4.78	51.00	6.92	5.06	2.46	13.84	2.46	15.41	3.26
Possible Range			13 - 52		19 -76		2 - 8		5 - 20		6 - 24	
Actual Range			25 - 50		31 -71		2 - 8		5 - 20		6 - 24	

Significant at 05% level ↔
Significant at 01% level —

*** Revision of Dimensions included in Tables 4,9,14,17.

TABLE (G) ***

REVISED DIMENSIONS: AGE AND SEX BY GRADE

Grade		N	Social Climate Index *		N	Self Norms**		Group Norms	
			Mean	SD		Mean	SD	Mean	SD
III	B	15	76.80	10.76	41	17.90	3.20	18.10	2.52
	G	14	79.60	12.41	41	17.46	2.62	17.66	2.82
	T	29	78.20	11.31	82	17.68	2.81	17.88	2.67
V	B	15	69.80	8.66	50	18.12	2.75	16.84	2.62
	G	15	67.20	6.65	48	18.54	2.44	16.15	3.14
	T	30	68.50	7.98	98	18.33	2.60	16.50	2.89
VII	B	14	71.10	10.71	49	17.12	1.94	15.76	2.47
	G	13	73.00	6.99	35	18.83	1.99	15.89	2.42
	T	27	72.00	9.06	84	17.83	2.13	15.81	2.44
IX	B	14	75.90	7.56	35	18.66	2.79	17.03	2.47
	G	15	78.70	8.02	45	18.16	2.78	15.98	2.71
	T	29	77.40	7.36	80	18.38	2.78	16.44	2.64
XI	B	15	78.40	6.96	50	16.00	2.12	14.92	1.95
	G	14	79.60	9.79	34	17.74	3.06	15.26	1.93
	T	29	79.00	8.25	84	16.70	2.67	15.06	1.93
Total									
	B	73	74.42	7.63	225	17.48	2.66	16.44	2.63
	G	71	75.58	8.25	203	18.15	2.62	16.22	2.77
	T	144	74.99	8.80	428	17.79	2.72	16.34	2.79
Possible Range			27 - 108			6 - 24		6 - 24	
Actual Range			54 - 100			10 - 24		8 - 24	

Significant at 05% level ⟷

Significant at 01% level —

* Grade level differences of 2.05 or greater are significant .01 level.

** All sex differences significant .01 level.

*** Revision of dimensions included in Tables 4,9,14,17.

and drops for subsequent grades except for VII. When all items are included to make the Index, the sharp drop after grade III is followed by recovery which makes the III and XI very much alike.

The mental health dimensions and index start high, drop with no trend toward recovery, and even show a further drop by Grade XI. Anxiety in particular, shows a gradual drop. It will be remembered that the higher the score, the lower the anxiety. While Grade IX sometimes reverses the trend, there is a general gradual and significant drop in the mental health scores.

It will be recalled the factoring resulted in just two overall norm scores, one for the self and one for the group. These can be thought of generally as high being a positive, adult acceptable view. Here it is interesting that only the XI on self show a significant difference where there is more alienation with an adult value oriented school situation. When the pupil responds for his peers, the skepticism about their norms increases in general with age.

It is obvious that the standard scores for most dimensions will have to be derived from grade level distributions. This was done, and tables were compiled for the individual grades with interpolations for the in between grades. These are available for use.

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Chapter IV

SELF CONCEPT MEASURES

THE INSTRUMENTS

There is yet another area of pupil nature which has fundamental meaning for a teacher. This is the pupil's self concept. Here we have what is perhaps the most salient clinical type of information for the educator. With knowledge about the "self", the teacher has a better chance to deal effectively with the moment-by-moment symptomatic behavior faced in classrooms. With the self concept are bound up one's hopes, one's fears, and one's defenses. Considerable work has been done on the self concept measures along the way in this research although it has not given any more security about their use than does Wylie's report.[1]

In an effort to find a practical method for general school use in understanding a pupil's self concept, several methods were tried and two were put to extensive test.

The Osgood Semantic Differential involves responses to a given stimulus through marking twenty-one sets of adjective scales. On each scale the pupil makes a check mark to indicate his position between the two adjectives. There were six stimuli. An example follows:

Myself (stimulus)

Uncertain ______/______/______/______/______/______/______ Certain

Pretend ______/______/______/______/______/______/______ True

(Twenty-one such adjectives sets are given for each stimulus presented.)

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[1] Wylie, R. C. The Self Concept University of Nebraska Press, Lincoln, 1961.

This method is designed to reduce defensive, "make myself look good" responses and at the same time to avoid difficulties of scoring found in more largely projective devices.

The score for the concept (as Myself) is obtained by summing the numerical weights for each check on the questionnaire. In weighting these responses, a check nearer the more positive adjective is given a greater weight and one nearer the less positive adjective is given less weight. Thus, for example, this is how the weighting would work.

Good 7 / 6 / 5 / 4 / 3 / 2 / 1 Bad

Sad 1 / 2 / 3 / 4 / 5 / 6 / 7 Happy

For each check, a weight is assigned according to its position on the continium. The weight of any single check would range from 1 to 7 and the final score for the concept could range from 8 to 56.

The other major method of studying self concept being currently explored is the Self-Esteem Inventory developed by Coopersmith. This contains fifty-eight items and the pupils make a check mark in response to each. Two samples follow.

	Like Me	Unlike Me
There are lots of things about myself I'd change if I could.		✓
I'm proud of my school work.	✓	

This Self-Esteem Inventory has four subscales in addition to a lie scale (8 items). These subscales are; self (26 items), social (8 items), home, (8 items), and school (8 items). After preliminary study and difficulty in use, the lie scale was dropped. Since we were interested in school rather than home phenomena, this sub scale was also eliminated.

This instrument is scored on the basis of number of responses indicating high self esteem. The direction is signified by both clinical judgement and face validity.

	Like Me	Unlike Me
I spend a lot of time day-dreaming.		✓
I'm pretty sure of myself.	✓	

✓ = Correct Answer

Thus, a range of 0 to 26 would be possible for the self subscale, a range of 0 to 8 for the social and school subscales.

There are many possibilities of using these two level self esteem measures. One can think in terms of discrepancy between the conscious and less obvious scores. Groups might be separated out for study where defensiveness appeared to follow one or another pattern. In the present research it has not been possible to explore this in any great detail.

Reliability Data Coopersmith has found, for 5th and 6th graders, sex differences were not significant. On a test-retest basis (five week interval) the reliability was .88. Nor did he find significant differences related to ethnic, racial or socioeconomic backgrounds.[1] Osgood[2] reports very high reliability but his data came from adults.

Semantic Differential The work started by using a complex stimuli sematic differential after the work of Osgood. All the final scale words used were from the evaluative factor found by Osgood, and for this reason the scales were not factored or correlated. At first this incorporated the several areas of self concept replicating the Coopersmith device and including evaluative and potency items. It can readily be imagined how pupils tried to grapple with these scales. Especially the younger pupils had trouble, but it upset many older ones as well. Particularly, they did not seem to have different targets for the four stimuli - it was all one "self". The intent had been to use differences between the Coopersmith, an obvious ego-defended self concept, and the Osgood, purported to be of a more projective character, to get at the inflated or deflated reports a pupil makes about himself. The lie detector in the Coopersmith had not proven workable as a control score in the earlier examination so this was dropped. While there still may be some possibility of this comparing the two scores to get at defensiveness will have to be explored at a later date.

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[1] Coopersmith and others The Antecedents and Dynamics of Self Esteem. Progress Report, May 15, 1961. Wesleyan University.

[2] Osgood, C. E.; Suci, G. J. and Tannerbaum, P. H. The Measurement of Meaning 1958, University of Illinois.

First off, when examining the grade level differences in Table 26, one is struck again by two facts: grade three is most positive in self concept and the drop to all other grades is significant. Here the low point is seven rather than the five of the Coopersmith. Girls always report a higher mean score than the boys. There is more of a tendency for a flat plateau than a build up after the low at grade five. Again, mean scores are considerably higher than the scale mean of 32.

In using the Semantic Differential, separate standard scores were compiled for all cases where the distributions were significantly different.

Dyer's[1] procedure was designed to assess the confidence

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[1] Dyer, C. O. Construct Validity of Self Concept by a Multi-Trait Multimethod Analysis. Ph.D. Thesis, University of Michigan, 1963.

TABLE 26

SEMANTIC DIFFERENTIAL (SELF)

GRADE		N	MEAN	STANDARD DEVIATION
III	B	47	47.51	5.49
	G	50	47.80	7.22
	T	97	47.66	6.44
V	B	50	42.74	7.05
	G	50	44.52	6.34
	T	100	43.63	6.76
VII	B	50	43.58	6.11
	G	50	44.94	6.08
	T	100	44.26	6.13
IX	B	50	42.94	5.94
	G	50	44.60	4.47
	T	100	43.77	5.32
XI	B	50	42.58	6.13
	G	37	45.30	5.31
	T	87	43.74	5.95
TOTAL	B	247	43.83	6.43
	G	237	45.43	6.13
	T	484	44.62	6.33

ACTUAL RANGE	25-56
POSSIBLE RANGE	8-56

one might place in the Sematic Differential and Coopersmith as instruments as well as the nature of the sub-constructs used in describing self concept. The same breakdowns of areas was used in both instruments: self, family-self, friends-self, and school-self. This has been reduced in the final study to: 1) a total self appraisal by both the Semantic and Coopersmith, and 2) social, self and school self in addition on the Coopersmith.

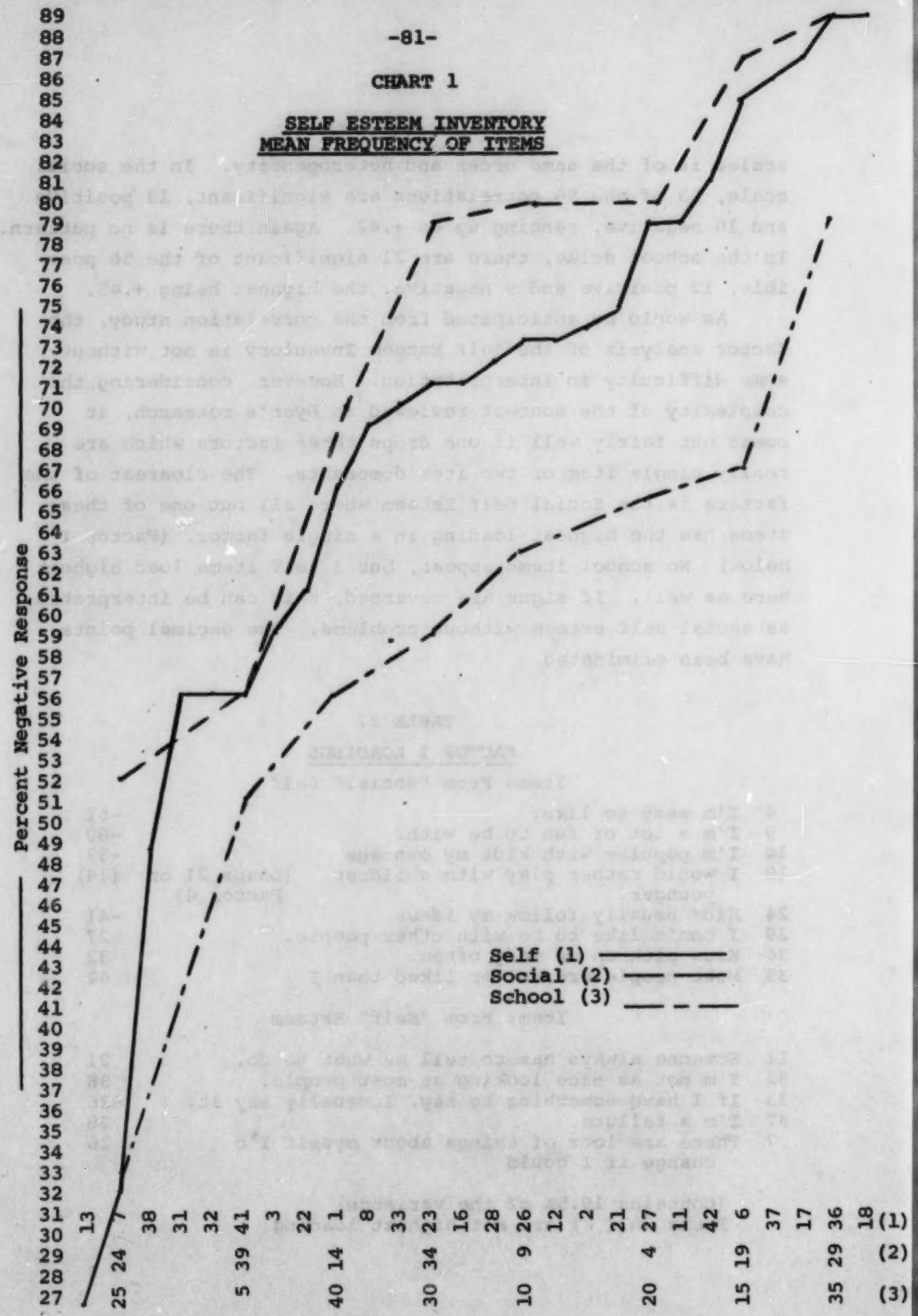
Dyer replicated his study in grades three, five, seven, nine and eleven, and of course found some variability in reliability. The averages for the semantic differential for boys ranged from .71 to .82 for the semantic differential and from .63 to .68 for the SEI; for girls the comparable figures were .71 to .82 and .52 to .72. The mean for the Semantic was .82 and for the SEI, .65 for the total sample. Of all of the original parts used (self, family, friends and school on both) "self" maintained excellent reliability on the SEI and fairly good on the Semantic across all grades for both sexes. However, poor reliabilities were consistent in the SEI "school" portion. Dyer believes this is a consequence of the restricted number of items, range of the scores, and the possible heterogeneity of the construct.

The Self Esteem Inventory First, a graph is presented of the mean response to items on the Self Esteem Inventory. The indication is that each dimension has items of high and low frequency, though not identical curves.

The intercorrelations of the items will not be presented in detail since they offer little of help in understanding the workings of the instrument. The self scale intercorrelations have 178 significant correlations at the 5% level or better (viz .10 or higher). Of these 112 are positive and 66 negative, the highest being +.38. There is no visible pattern. The relationships with the items in the social and school self

CHART 1

SELF ESTEEM INVENTORY
MEAN FREQUENCY OF ITEMS



scales is of the same order and heterogeneity. In the social scale, 23 of the 56 correlations are significant, 13 positive and 10 negative, ranging up to +.42. Again there is no pattern. In the school sclae, there are 21 significant of the 56 possible, 12 positive and 9 negative, the highest being +.45.

As would be anticipated from the correlation study, the factor analysis of the Self Esteem Inventory is not without some difficulty in interpretation. However, considering the complexity of the concept reviewed in Dyer's research, it comes out fairly well if one drops three factors which are really single item or two item domonants. The clearest of the factors is the Social Self Esteem where all but one of these items has the highest loading in a single factor. (Factor I below) No school items appear, but 3 self items load highest here as well. If signs are reversed, this can be interpreted as social self esteem without problems. The decimal points have been eliminated.

TABLE 27

FACTOR I LOADINGS

Items From "Social" Self

4	I'm easy to like.		-51
9	I'm a lot of fun to be with.		-60
14	I'm popular with kids my own age		-57
19	I would rather play with children younger.	(Loads 21 on Factor 4)	(14)
24	Kids usually follow my ideas		-41
29	I don't like to be with other people.		27
34	Kids pick on me very often.		32
39	Most people are better liked than I		42

Items From "Self" Esteem

11	Someone always has to tell me what to do.	21
32	I'm not as nice looking as most people.	38
33	If I have something to say, I usually say it.	-26
37	I'm a failure.	28
7	There are lots of things about myself I'd change if I could	26

(Contains 19.5% of the variance)
Items in ( ) are not highest loading

The second major factor is a highest loading combination of 10 items from self and 4 items from school esteem, but there are several other combinations which have strength as well.

TABLE 28

FACTORS II, III, IV, V LOADINGS

Items From "School" Self

		II	III	IV	V
5	I find it very hard to talk in front of class.	-30			
10	I'm proud of my school work.	(24)	-48		
15	I'm doing the best work I can		-51		
20	I like to be called on in class.	(21)	-29		
25	I'm not doing as well in school as I'd like.	(-19)	25		
30	I often feel upset in school.	-61			
35	My teacher makes me feel I'm not good enough.	-29			
40	I often get discouraged in school.	-53			
	Items From "Self" Esteem				
1	I spend a lot of time day-dreaming.	(-20)	32		
2	I'm pretty sure of myself.		-36		(29)
3	I often wish I were someone else.	-48			
6	I wish I were younger.	(-18)		25	
7	There are a lot of things about myself I'd change if I could.	-29			
8	I can make up my mind without too much trouble.				55
11	Someone always has to tell me what to do.	(-15)*			
12	It takes me a long time to get used to something new.	-31			
13	I'm often sorry for the things I do.	-34			
16	I give in very easily.	(-23)			
17	I can usually take care of myself.				(24)
18	I'm pretty happy.	19			

		II	III	IV	V
21	I understand myself.	(19)			25
22	It's pretty tough to be me.	-47			
23	Things are all mixed up in my life.	-30			
26	I can make up my mind and stick to it.	16			49
27	I don't really like being a (girl-boy)		(-21)	33	
28	I have a low opinion of myself.	-37			
31	I often feel ashamed of myself.	-41			+38
32	I'm not as nice looking as most people.	(-18)	Highest loading in Factor I		
33	If I have something to say, I usually say it.	(24)	Highest loading -26 in Factor I)		
36	I don't care what happens to me.			58	
37	I'm a failure.			56	
38	I get upset easily when I'm scolded.	-44			
41	Things usually don't bother me.	(21)			29
42	I can't be depended upon.			50	

* Highest loading +21 on a dropped factor.
(% of Variance: Factor II; 25.9; III 11.9; IV 14.1; V 10.9)

Factor II contains the mainstream of esteem items, whether about the self or about school and is eventually a total self esteem. Factor III is the next dominate combination, a "doing well in school", and also contains "sureness" and "daydreaming". Factor IV is self depreciation of a pronounced nature. Factor V appears to be a self certainty and ego strength. But, as can be seen, these factors are intermingled. In considering the implications of the factor analysis for dimensions and norms, it is clear that, in this sample at least, there is some question about the nature of the sub scores. Social is fairly clear except for the several additions. The other two,

TABLE 29

COOPERSMITH SELF ESTEEM

Grade	N	Self		Social		School		Total	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
III B	47	18.51	4.44	5.87	1.67	6.28	1.59	30.66	6.54
G	50	18.18	4.17	5.54	1.82	6.10	1.45	29.82	6.52
T	97	18.34	4.31	5.70	1.76	6.19	1.52	30.23	6.55
V B	50	17.36	4.71	5.46	2.05	4.46	1.87	27.28	7.34
G	50	16.76	4.54	5.28	1.84	4.68	1.90	26.72	7.22
T	100	17.06	4.63	5.37	1.95	4.57	1.89	27.00	7.29
VII B	50	17.78	3.87	5.70	1.75	4.62	2.05	28.10	5.85
G	50	16.76	4.54	5.72	1.69	4.84	2.05	27.74	7.09
T	100	17.48	4.35	5.71	1.72	4.73	2.05	27.92	6.50
IX B	50	18.50	4.06	6.14	1.50	4.16	1.74	28.80	5.91
G	50	18.26	3.90	6.30	1.60	4.28	1.59	28.84	5.80
T	100	18.38	3.98	6.22	1.55	4.22	1.66	28.82	5.86
XI B	50	18.82	4.26	6.50	1.65	4.40	1.56	29.72	6.15
G	37	18.11	4.33	7.11	1.25	4.00	1.78	29.22	6.05
T	87	18.52	4.31	6.76	1.52	4.23	1.71	29.51	6.11
Total									
B	247	18.19	4.31	5.94	1.77	4.77	1.92	28.89	6.49
G	237	17.68	4.41	5.93	1.79	4.82	1.92	28.43	6.68
T	484	17.94	4.36	5.93	1.78	4.79	1.92	28.66	6.59
Actual Range		4 - 26		1 - 8		0 - 8		9 - 42	
Possible Range		0 - 26		1 - 8		0 - 8		0 - 42	

Significant at 01% ⟷
Significant at 05% —

School and General Self Esteem are not single, distinctive dimensions. In fact, there is overlapping and overall diversity. On the other hand, there is no great clarity about these factors either, as sub factors or in the total relationship. For this reason, the results were not used to develop new dimensions with separate norms. The reader should be aware that we used the original three self esteem measures which has some obvious drawbacks when the factoring is observed.

Coopersmith Grade Level Standardization It has been common to use self concept measures without reference to age levels, although one would suspect that both age and sex differences might need standardization. Again, as we go down to the third grade, it may be that there is both the matter of how these children are able to respond to tests of this conceptual type as well as whatever real condition exists.

The grade level changes for the self were interesting. Starting high, there follows a significant drop to grade five with a gradual build up again until eleven is higher than three. Except for grade three, the means for girls are always under the boys though not significantly so. Really, the only grade which deviates from any other is five which came as somewhat a surprise since it had been thought that the junior high age would show maximum upset in this area. In social self, the success one feels one has as a social being, there is a lower starting point for grade three though grade five is the lowest and then follows a gradual increase through grade nine. As can be seen, with only 8 items on the scale, even most of these unimpressive changes are significant. After the third and fifth grade, average girls are more positive about their social selves than are the boys, though this difference is not significant, and cancels out in the overall totals. The school self presents the least clear picture, and is further confused if one examines some of the eight items. The impressive thing is the drop from grade three to five, and the lack of any recovery as is the case in the other two. The course of events is irregular, with five and seven and nine and eleven paired off to a degree. After grade three until eleven, girls appear more school self secure though as usual the degree of difference is minimal. Of course, these part scores are reflected in the total scores where the trend is clearly high for grade three, a severe drop and then gradual recovering in total self esteem by grade eleven, but never back to that reported by three. It is interesting that all the mean scores for both sexes are above the theoretical mean for the scale, though the school mean is the least elevated. While one might conjecture from this that school self concept is the least positive of the three, there is no way of being certain that the items are of equal potential across scales. At any rate, it was clear that the norms in this scale had to be devised to accomodate the differences found and standard scores were devised for each distribution as necessary. The impact is not clear until one looks at the individual items and the manner in which the pupils respond to them.

Of the fifty-six items, twenty-six items make up the "self" scale. On this scale all but two items produce over 10 percent negative responses about the self. Even on these two about 10 percent of all the pupils express a very negative self image. Self-report instruments are always subject to interpretation. What does a response mean? Are they really honest? Won't the pupils be defensive? Of course any self report is subject to various limitations. Pupils may be defensive, give stereotyped replies, or just lie. The test has previously been found to be reliable, and conversations with a small smaple of the pupils giving low responses suggests fairly honest reporting. If this is defensive, it is unusual that pupils should go out of their way to look bad! It may well be that the actual number of discouraged pupils is much higher.

Many of the items show a decrease in self esteem with age. For example, to "I feel pretty sure of myself," twelve percent of the third graders say "unlike me," while thirty-four percent of the eleventh graders make that response. Again, forty-four percent of the eleventh graders often wish they were someone else. Almost a third of all the pupils see themselves as "giving in" very easily, and say "it's pretty tough to be me," while twenty-five percent of them feel that things are all mixed up in their lives, and have a low opinion of themselves. As many as 8% of the high school students consider themselves failures, and even a higher percentage of the younger children feel this way.

With such low personal esteem, what of their school self esteem? Is school an oasis? We already have reason to doubt from the overall picture of this dimension scores. The general impression one gets is that for the young child, school is a secure place with regard to mental health, but as they grow older this confidence diminishes. While some items tend to stay the same over the grades, many change for the worse. Eighty-four percent of the third graders are proud of their school work, while only fifty three percent of the eleventh graders are. In the low grades, ninety three percent feel they are doing the best work they can; only thirty seven percent of the oldest pupils feel this way. Regardless of their achievement quotients and the fact that the failures tend to drop out, the pupils who remain in school come to feel that they are doing inadequate work. Again, over half of the young pupils say that they are doing as well in school as they would like, but only twenty two percent of the eleventh graders feel this way. About forty percent of pupils at all ages often feel upset in school; with regard to achievement twenty percent say their teacher makes them feel "not good enough." And these items stay virtually the same with age. Over forty percent report they often become discouraged in school, and this increases with age from twenty two percent to forty three percent.

While neither the self picture nor the school self esteem is pleasant, the school self appears to be the more negative. Whatever else we have done, we have communicated a sense of personal failure to many of our pupils. In general, the longer we have them, the less favorable things seem to be. There are probably plenty of good rationalizations to take the sting out of these findings. Some educators have said that all this shows is, we have raised the sights of our pupils in regard to school performance. This hardly seems enough, when the other self scores do not follow this pattern. The fact remains, if we care about the pupil's self regard, we have much work to do. We need to know more about the nature of our pupils through the years. Much of their energy is now being devoted to handling their sense of failure which could better be devoted positively to school effort. Pupils with such anxieties are, of course, harder to teach.

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Chapter V

PUPIL NEEDS

THE MY OPINIONS QUESTIONNAIRE

No problem in psychology is more complex than ascertaining needs, as has been demonstrated from Murray to Atkinson, Veroff and McKeachie. At the same time, this is a matter of considerable importance to education. Traditionally, lists of needs have been presented to teachers as the well springs of activity.

Out aim in developing an instrument in this area was two fold. First, the need constructs should be cast in terms of particular pertinence to the elementary and secondary classroom situation. Second, the method af assessment would have to be administered in a group situation. Considerable experimentation was done before the present test design was selected. A series of rotated paired choices was tried after the fashion of vocational interest tests. Kelly's[1] personal constructs were also explored, and some items were obtained in this way, but the development on such an aprioi basis was beyond our resources. Sentence completion stems were used with both free response and choice check lists. Depth interviews were used to seek out how youngsters expressed "need" preferences. In most of these efforts we, of course, assumed the presence of the needs we were to study.

Eventually four need configurations thought to be of most use to the teacher were selected: affiliation, achievement, influence and a creativity-independence complex. All have obvious impact in the classroom activities.

The method of assessment would have to allow for dominance of an individual need with some range of intensity but not prevent a flat, equalized profile of the several needs if the subject so wished to reflect.

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[1] Kelly, G. A., The Psychology of Personal Constructs, 1955 W. W. Norton, N.Y.

We made no assumptions that the presence of one need would mean the absence of another. However, it is obvious that you cannot give the directions as finally densed and still allow for high individual intensity on all three needs. An individual can play one up high, share the intensity with two to a lesser extent or have three equal but with lower intensities. This is mentioned because, theoretically the position here is that one person might have a higher intensity of need in all three areas than another had in even his high area. The test procedure did not permit such recording, however. When the scale was administered by having the pupil put as many cards as he wished in the high intensity pile, many pupils tended to produce non discriminating scores, everything being high. While this might be truly the picture for some, a flood of such responses did not fit our theoretical stance, and this scoring process was not repeated. In another similar scheme previously used with adults, the correlation was high between the forced and free sorting scores but the allowing the respondent to put "all you want" in any pile drastically reduced the differences between scores as well as the range of scores obtained. Hence this was not repeated.

Now the way one scores the scale, of course, represents a theoretical position regarding the interrelationship of need structures in children. One position would be a typology where one single need dominance would characterize the individual. The opposite position would imply that each pupil could have various degrees of presence or absence of all needs. In this way of looking at it, a child could score high on all, low on all or any combination derived from having him rate each item of the scale independently.

The design finally utilized represents some of both positions. With a modified Q-sort, the scores are interdependent.

A pupil might have a high score, and two low scores, or balanced "even" scores on each need, but he could not have all low scores or all high scores. This tends, of course, to accentuate differences, and gives the opportunity for patterns of relative high intensity in two needs at the same time.

In the preliminary form 40 items were printed each on individual cards, 10 each for the 4 dimensions indicated above: affiliation, achievement, influence and creativity-independence. The items were judged to have face validity by several psychologists and the wording was tried out and refined on a pilot run of pupils. These were given to approximately the same number of pupils in grades 3, 5, 7, 9. The directions for administration and scoring were, with very little alteration, the same as for the final form. These 40 items were intercorrelated and factored. Two changes resulted. First, the creative-independence dimension did not appear except in three items which were removed from the test and placed elsewhere in the classroom questionnaire. Second, items with a low or double factor loading were removed. We were left with 24 items which appeared satisfactory, 8 each for the three scales, affiliation, influence and achievement.

This factored and reduced 3 dimension needs test was then given to a new sample of 153 pupils with subgroups from grades 3 through 11.

MY OPINIONS

There are some activities you like more than others in your life at school. Each of the cards in this envelope mentions an activity which may give you a lot of satisfaction or be something you don't care much about doing. There is a special way to sort the cards so that it will be easier to decide.

1. Remove everything from the large envelope. Write your name on the yellow card and place this card back inside the large envelope.

2. Look through all of the white cards and choose the 8 that give you the most satisfaction to do. Put these cards on top of the envelope labeled "satisfying."
3. Now take the cards you have left and choose 8 of the cards with activities which would give you the least satisfaction to do. Place these cards on top of the envelope labeled "unsatisfying."
4. There will be 8 cards left which you have not placed in either pile. Put these 8 cards into the large envelope.
5. Of the 8 "satisfying" cards choose 3 which give you the highest satisfaction of all. Place these 3 inside the envelope labeled "most satisfying". Place the remaining 5 cards inside the envelope labeled "satisfying."
6. Now take the 8 cards on the "unsatisfying" envelope. From these 8 cards choose 3 that give you the least satisfaction of all. Put these 3 inside the envelope labeled "least satisfaction." Place the remaining 5 cards inside the envelope labeled "unsatisfying".
7. Place all the envelopes back inside the large envelope, you are finished!

LIST OF INDIVIDUAL ITEMS

1. Working hard at any job I undertake.
2. Being appointed or elected chairman when on a committee.
3. Arguing for my point of view when attacked by others.
4. Being able to control the actions of others.
5. Knowing that I am the kind of person other people will like.
6. Trying again after I have failed.
7. Convince people about something they don't agree with.
8. Being good at solving hard problems in school.
9. Being able to persuade and influence others to do what I want.

10. Sharing most of my thoughts with my friends.

11. Solving unusual problems.

12. Being with people I know and like.

13. Being able to show that I have done a difficult job.

14. Having the chance to supervise and direct the actions of others.

15. Being with a whole bunch of kids - where everyone is friendly.

16. Doing my best in everything I undertake.

17. Knowing how other people feel when they have troubles or problems.

18. Making decisions about what we are going to do when I'm in a group.

19. Being thought of as a leader.

20. Getting difficult goals for myself and trying hard to reach them.

21. Knowing that I can make friends.

22. Always sharing things with my friends.

23. Knowing that my friends feel the same way I do about things.

24. Keeping at my school work until I get it done.

This scale is scored as follows. When an item is rated most satisfying, 5; more satisfying, 4; remainder, 3; less satisfying, 2; least satisfying, 1. There are eight items on each of the three dimensions, and the scores would be the total points for each of the items in the set.

TABLE 30

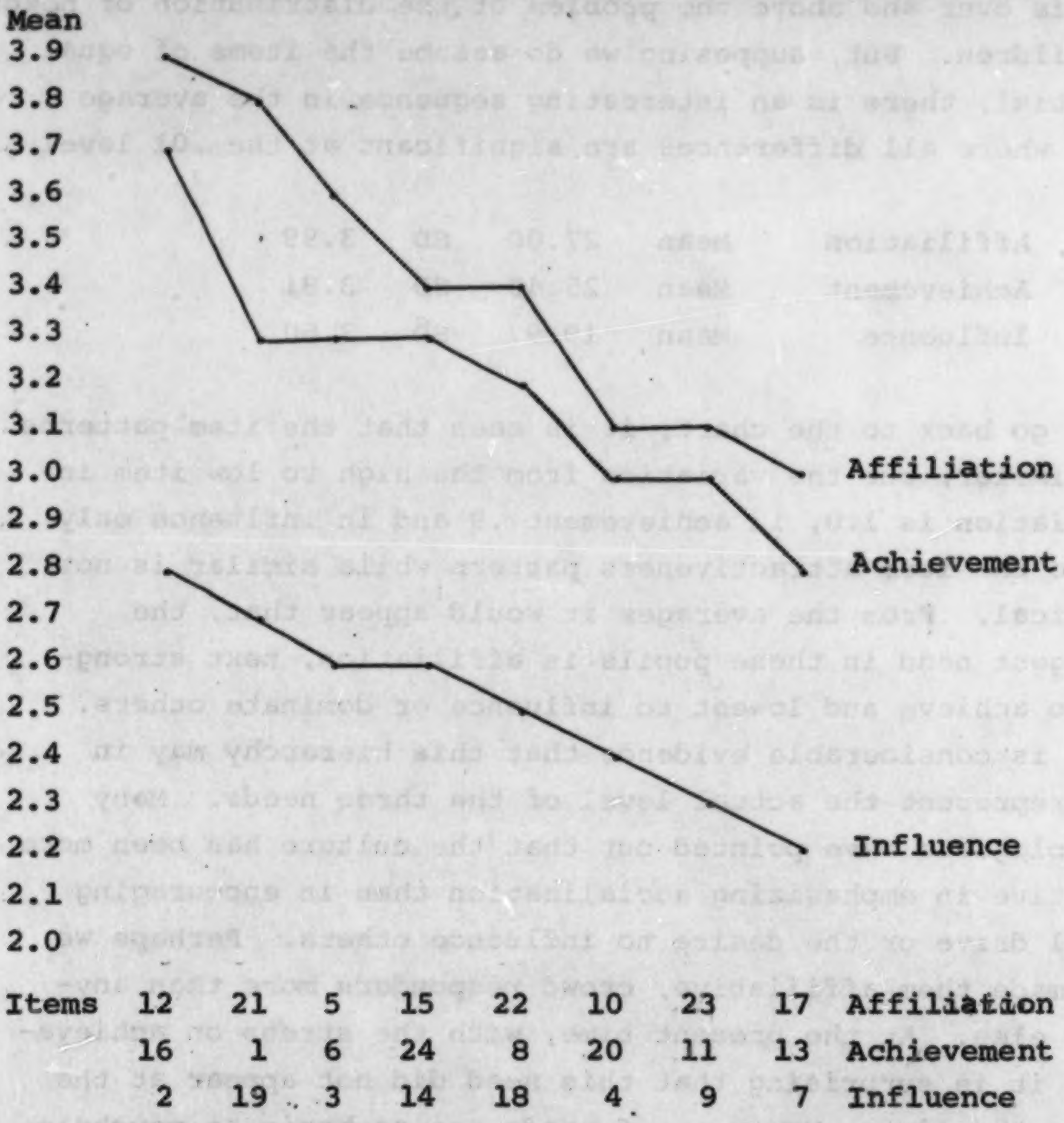
MY OPINIONS: MEAN AND STANDARD DEVIATION OF ITEMS

Item Number	Mean	Standard Deviation
1	2.34	1.14
2	2.77	1.24
3	2.54	1.06
4	2.37	1.13
5	3.58	1.21
6	3.28	1.17
7	2.24	.98
8	3.21	1.08
9	2.31	1.08
10	2.99	1.20
11	2.86	1.06
12	3.90	.98
13	2.83	1.04
14	2.56	1.17
15	3.43	1.21
16	3.69	1.03
17	2.88	1.05
18	2.45	.97
19	2.75	1.23
20	2.92	1.11
21	3.80	1.01
22	3.36	1.00
23	3.06	1.02
24	3.33	1.19

CHART 2

MY OPINIONS

ITEMS PLOTTED BY "NEED" FROM HIGH TO LOW MEAN RESPONSE



Two things are obvious. First the curves are similar in nature with some items much higher than others in all three, and the two, affiliation and achievement, being very close. Second, the curve for influence is distinctly lower, as no question is ever overlapping in mean response.

Of course, there is no magic in the validity of the final questions assuring us that the items for each of the three assumed needs are equivalent, hence the differences real. This is over and above the problem of the distribution of needs in children. But, supposing we do assume the items of equal potential, there is an interesting sequence in the average means where all differences are significant at the .01 level.

Affiliation	Mean	27.00	SD	3.99
Achievement	Mean	25.40	SD	3.81
Influence	Mean	19.97	SD	3.60

If we go back to the chart, it is seen that the item patterns are similar, but the variation from the high to low item in affiliation is 1.0, in achievement .9 and in influence only .6, so the item attractiveness pattern while similar is not identical. From the averages it would appear that, the strongest need in these pupils is affiliation, next strongest to achieve and lowest to influence or dominate others. There is considerable evidence that this hierarchy may in fact represent the actual level of the three needs. Many psychologists have pointed out that the culture has been more effective in emphasizing socialization than in encouraging school drive or the desire to influence others. Perhaps we have made them affiliative, crowd responders more than anything else. At the present time, with the stress on achievement, it is surprising that this need did not appear at the top of the list. However, if needs are as basic as psychologists indicate, they are cultivated through deep cultural mores and do not respond to the contemporary gyrations. If this be true, strong external pressure to achieve becomes a source of tension rather than producing changes in needs which educators imply.

Before learning this, it should be pointed out that the profiles of various students are diverse. Here are a few samples of raw scores.

	Achievement	Affiliation	Influence
Highest Achievement	34	21	17
Lowest Achievement	17	35	24
Highest Affiliation	21	33	18
Lowest Affiliation	33	15	24
Highest Influence	21	21	30
Lowest Influence	28	29	13
A Flat Profile	24	24	24

It is obvious that the differences in the last case, while they appear identical still are small differences, because, though the raw scores are identical, they are from different distributions. Thus, they are not really scores of the same intensity.

In the following three tables for each need only the significant inter-item correlations with each other and the total need score are presented. Decimal points are dropped. The correlations with the total need scores are somewhat inflated because each item in turn contributes to that total score and of course all are positive. The 5% significances were given, and 1% are underlined. N is 153 cases in each.

In the pretest explorations, attempts were made to keep face valid items with low correlations when there was a choice as the number of items was reduced. The achievement item with a low relationship to the total score, No. 11, which is "solving unusual problems" was a poor choice. This does enter into the achievement factor loading (.36) neither affiliation or dominance, but it is the strong component in an individual unnamed factor as well. The two significant negative intercorrelations are understandable when the questions are examined with this evidence. Being able to say one has done a difficult job

TABLE 31

SIGNIFICANT ITEM RELATIONSHIPS NEED ACHIEVEMENT

	6	8	11	13	16	20	24	25
1					36	17		54
6				-18				36
8			23			23		42
11				23				11*
13							-16	27
16						20	17	55
20								51
24								42
25								

*Not significant at 5% level.

ITEMS CORRESPONDING TO TABLE 31

1. Working hard at any job I undertake.
6. Trying again after I have failed.
8. Being good at solving hard problems in school
11. Solving unusual problems.
13. Being able to say that I have done a difficult job.
16. Doing my best in everything I undertake.
20. Setting difficult goals for myself and trying hard to reach them.
24. Keeping at my school work until I get it done.
25. Total

suggests something quite different than trying again after failure or keeping at school work until it is done. All items in each dimension are negatively related to the other two total dimension scores in the ten instances where the relationship is significant at all. There are two achievement items which have significant and positive (all others are negative or not significant) correlations with other items in other areas (as distinct from the dimension score relationships): "being able to say I have done a difficult job" (Achievement) and "being able to persuade and influence others to do what I want" (Influence) correlate at the 1% level and "keeping at my school work until I get it done" (Achievement) and "convincing people about something they don't agree with" (Influence) correlate at the .05% level and with "being with a whole bunch of friendly kids" at .01% level.

TABLE 32

SIGNIFICANT ITEM RELATIONSHIPS: AFFILIATION

	10	12	15	17	21	22	23	26
5	-18		23		31			39
10		19	33	26			22	55
12					25		27	47
15						25	27	67
17								30
21								48
22								36
23								52
26								

ITEMS CORRESPONDING TO TABLE 32

5. Knowing that I am the kind of person other people will like.
10. Sharing most of my thoughts with my friends.
12. Being with people I know and like.
15. Being with a whole bunch of kids - where everyone is friendly.
17. Knowing how other people feel when they have troubles or problems.
21. Knowing that I can make friends.
22. Always sharing things with my friends.
23. Knowing that my friends feel the same way I do about things.
26. Total

All individual dimension items correlate significantly with the total need-affiliation score, and there is only one significant, negative inter item score. This is between "knowing I am the kind of person other people will like" and "sharing most of my thoughts with friends." Again, no items have positive relationships with either of the other total need scores. In fact, all are negative and significant. All inter item significant correlations with elements of the other two need scores are negative. Loadings on the factor tend to be consistent though in several instances not the highest item loading when there was a splinter factor appearing.

TABLE 33

SIGNIFICANT ITEM RELATIONSHIPS: INFLUENCE

	3	4	7	9	14	18	19	27
2	-22	17	-19	-21	21			36
3			26					30
4				21	28			63
7				22				30
9								58
14								40
18								40
19								
27								

ITEMS CORRESPONDING TO TABLE 33

2. Being appointed or elected chairman when on a committee.
3. Arguing for my point of view when attacked by others.
4. Being able to control the actions of others.
7. Convince people about something they don't agree with.
9. Being able to persuade and influence others to do what I want.
14. Having the chance to supervise and direct the actions of others.
18. Making decisions about what we are going to do when I'm in a group.
19. Being thought of as a leader.
27. Total

Again, all items in the influence set correlate significantly with the total need - influence score, and most of them are independent of each other. Item 2, "being appointed or elected chairman when on a committee" and "arguing for my point of view" appear negative at the 1% level; chairmanship and Item 7 "convincing people about something they don't agree with" is negative at the 5% level, Item 9 "being able to persuade and influence others to do what I want" is negative at the 1% level. This is easy to understand since receiving the honor of being elected is quite different from arguing with others. One might expect this to load on affiliation. It did not, but it did load heavily on a residual factor again. All item relationships with the other total need scores are negative and about half are significant. There are two significant positive correlations of items of influence with items in other scales: "convince people about something they don't agree with" and "keeping at school work until I get it done" (Achievement) at .05% level, and "being able to persuade others" with "being able to say I have done a difficult job" (Achievement) at .01% level. Both of these items have relatively low loadings in the influence factor as well.

Table 34 presents the interrelationships of the three need structure combinations. The difficulty is in interpretation, since the scores are not independent. At any rate, achievement and affiliation are least akin, and influence and achievement most similar.

TABLE 34

INTERRELATIONSHIP OF NEED STRUCTURES

	Affiliation	Influence
Achievement	-61	-23
Affiliation		-48

It is difficult to ascertain the meaning of a factor analysis on a forced choice instrument of this type. In the pilot study this and the intercorrelations were useful in reducing the questions and sharpening up the inter consistency. Items which tended to load on two dimensions were removed. When the factor analysis was done with the present scale it was obvious that there would be a split interlocking since the three remaining needs had, in our scoring method, negative intercorrelations as just described. The result of the high negative relationship was that the strongest factor would control the others. As a result, two factors composed of + and - items encompassed the majority of the items. Those items with low interrelationship would then tend to be found in a separate factor.

DERIVATION OF INTERNAL CONSISTENCY MEASURE FOR MY OPINIONS CARD SORT

Most internal consistency measures have been devised for use with dichotomously scored data that relates to a single dimension. With homogeneous or factorially unique tests, the odd-even method is frequently applied. This method assumes that physical and psychological factors such as fatigue, motivation and response sets remain similar between adjacent pairs of items, and that adjacent items are equivalent with respect to difficulty with similar means, standard deviations and skewness in their distributions. Presentation of the items is in a standard order as on a pencil and paper test.

The internal consistency measure for My Opinions retains the purpose and spirit of the theory. Unfortunately at the present time, the "needs" have no adequate criterion measure. As discussed previously, we take as an assumption that a consistent pattern of needs resides within the individual.

The card sort format of the test prevents a standard order of presentation which renders an odd-even assignation meaningless. Instead of dichotomous data, scored 1-0 or pass-fail, the items are scored from 1 for "least satisfying" to 5 for "most satisfying." Limiting the number of items that may be assigned to each category to force a normal distribution depresses one item to give another priority. With only eight items to represent each need (achievement, affiliation and influence) equivalence of items is necessarily less than desirable. The means of items on each dimension were ordered and adjacent items paired. The members of each pair were assigned to subtest A or subtest B using a random number table. The items grouped as follows:

	Subtest A	Subtest B
Achievement	1, 6, 8, 11	16, 24, 20, 13
Affiliation	12, 5, 10, 23	21, 15, 22, 17
Influence	19, 3, 18, 7	2, 14, 4, 9

An achievement, an affiliation and an influence score was derived for each subtest for each member of the norm group. The subtest A achievement score was then correlated with the subtest B achievement score, affiliation A with affiliation B, influence A with influence B. The obtained correlation was estimated for a full length test using the Spearman-Brown formula. Table 34 compares the mean and standard deviation of each dimension on the two subtests, gives the correlation obtained between the two four-item dimension scores and the estimated correlation. For 150 cases, $r = .16$ significant at the .05 level, $r = .21$ at the .01 level.

TABLE 35

THE RELATIONSHIP BETWEEN DIMENSIONS ON SUBTESTS A AND B OF MY OPINIONS CARD SORT

Dimension	Subtest A		Subtest B		N	r	est r	sig.
	X		X					
Achievement	12.66	2.36	12.74	2.37	149	.297	.458	.01
Affiliation	13.55	2.47	13.49	2.34	152	.358	.527	.01
Influence	10.00	2.13	9.99	2.69	152	.108	.195	.05

DEVELOPMENT OF STANDARD SCORES FOR NEEDS

Table 36 presents data on developmental levels, to answer the question of stability of needs across age and sex.

The boy and girl differences are less than we anticipated but in the direction one would expect. Girls (except for grade 3) are more affiliation minded to a significant degree in grade 7, 9, and overall. Boys (again except for grade 3) are more achievement minded than are girls and to a significant degree in grade 9, 11, and overall. The difference in influence, while favoring the boys, is not significant. The age level differences in affiliation show a gradual build up for girls until after grade 9 when it drops off; for boys the reverse is true but the differences, with these N's, are not significant. In achievement the boys show unusual stability after the third grade and the girls as well show little change. All age level total differences here are between other grades and grade three. The only significant differences in influence are with grade three totals although the girls do show a small but consistent drop until after grade 9. The norm tables developed provide separate distributions to accomodate the instances where significant differences were found.

While there are these statistically significant differences with these small "N's", if one leaves out the third grade where one wonders how well such scales can be executed,

TABLE 36

MEAN NEED SCORES BY SEX AND GRADE

Grade		N	Affiliation Mean	Affiliation SD	Achievement Mean	Achievement SD	Influence Mean	Influence SD
III	Boys	20	27.35	3.34	23.30	3.13	21.90	3.00
	Girls	25	26.82	4.43	25.14	2.95	20.27	3.28
	Total	45	27.07	3.91	24.26	3.14	21.05	3.22
V	Boys	9	26.33	3.08	27.44	2.88	20.22	3.93
	Girls	15	27.53	4.05	25.20	3.97	19.13	4.44
	Total	24	27.08	3.69	26.04	3.70	19.54	4.20
VII	Boys	17	25.06	3.61	27.12	4.81	19.94	3.21
	Girls	14	28.93	3.56	24.07	3.54	18.86	3.78
	Total	31	26.81	4.04	25.74	4.49	19.45	3.46
IX	Boys	13	24.09	4.25	27.46	3.55	19.69	4.05
	Girls	7	30.29	5.00	23.86	3.54	18.00	3.78
	Total	20	26.65	5.00	26.20	3.93	19.10	3.68
XI	Boys	21	26.48	3.47	26.90	3.45	20.14	3.14
	Girls	15	28.27	4.13	24.33	3.87	19.67	4.17
	Total	36	27.22	3.81	25.83	3.80	19.94	3.55
Total								
	Boys	80	26.09	3.62	26.20	3.96	20.48	3.39
	Girls	73	28.00	4.16	24.66	3.49	19.42	3.76
	Total	153	27.00	3.99	25.46	3.81	19.97	3.60

Possible Range

13 - 35

Significant Differences at 5% ————

Significant Differences at 1% ⟷

the more impressive thing is the stability of the results over age and across sex lines. Of fifteen sex differences in the three needs by grades, only 4 were significant. There were no affiliation grade level differences, and grade level differences in the other two needs were only with grade 3.

In order to give each pupil a score which was equalized for the difference in the observed scaling, normative standard scores were compiled. Note that this does not necessarily mean that two needs are on equal continua since there is no way of knowing that various need intensities are equal in the first place. These standard scores will be used in the final assembly of interrelationships.

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CHAPTER VI

Mary Anne Hayes*

APPLICATION OF THE SCHOOL CLASSROOM RESEARCH QUESTIONNAIRE

A major goal of the School Classroom Research Questionnaire (SCR) is to provide the classroom teacher with immediately useful group and individual information. Administration must be relatively simple and the results must lend themselves to interpretation and applicative insight.

After the individual questionnaires have been scored, the group mean on the Learning, Social and Mental Health Indices and on their subdimensions may be compared to the normative group, to another group, or to the same group at another time. The pattern of scores and their deviations help to focus attention on areas worthy of more intensive study. The group response to individual items on a dimension of concern can be informative. The pattern of scores of an individual may be related to the classroom means or to those of the normative group. Comparison of individuals within the class by ranking on dimensions is useful. Also of interest are differential perceptions of boys and girls within the class. One seeks to ascertain where the group differs from the desired goal, which are the contributing members and their degree of influence. The latter inference is aided by drawing a sociogram. In planning focused intervention, notation of how an individual's perceptions deviate precedes the pursuit of "Why do they?", "What do we wish to do about it?", and "What can we do about it?"

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*Mary Anne Hayes is a student in the Ph.D. Program in Education and Psychology, University of Michigan and served on the staff as research assistant.

The proof of the research is in the utilization and a unique opportunity presenting itself for close study.

One particular class had a reputation for being "difficult." Both the teacher and the parents had expressed concern and hope that an atmosphere more oriented toward learning could be created. The teacher requested an analysis using the instruments.

Class Characteristics and Data Collected

The experimental design was a pre-post administration of the SCR with the group serving as its own control. The scoring procedure automatically permitted comparison of the group with a normative population at the same grade level. Supplementary information was available in the form of SCR scores for two prior years and self concept and need structure information for each of the three years. The temporal sequence of the experimental design was:

Grade Level of Pupils

3	4	5 (Fall)		5 (Spring)
SCR	SCR	SCR	INTERVENTION	SCR
SELF	SELF			
NEEDS	NEEDS			

The subjects were 10 girls and 12 boys in the fifth grade. Their chronological age ranged from 116 months to 136 months. Intelligence (Stanford Binet or WISC) ranged from 100-160. The cultural background was primarily middle class. The group history showed that the class had been split between two combined third-fourth grade classes during their third grade year and had been combined into one class in the fourth grade. The fourth grade year had a change of teachers during the year. The group had been tagged "difficult" by teachers and administrative staff.

In the fifth grade the SCR was administered to the group about one month after the start of school in the fall. On this basis intervention procedures were designed after a conference between the teacher, the research staff and an administrative representative. The SCR was again administered as part of the regular spring testing program about a month prior to the end of the school.

Scores which were converted to standard scores compiled on the normative group mean of 100, standard deviation 20. Thus a score of 120 is one standard deviation above the normative group mean, a score of 80, one standard deviation below. Sex differences are accommodated in the norms.

The mean standard score, standard deviation and range of scores was found for each Index and subdimension for the boys, the girls and the combined group. The differences between the means were compared by t-test, the variances by F ratios. Correlations between dimensions within tests were also run. A blind analysis of the scores of each individual was made by the research staff, the code number permitting only knowledge of the pupil's sex. The pupils were then identified and the information and recommendations made available to the teacher. Prior to the joint conference, the teacher recorded her perceptions of the pupil's classroom attitudes and behavior.

Original Status of the Group

The initial question was "how does this class see itself?" The pupils' self report responses are accepted as concrete behavioral samples. It is assumed that the degree of distortion over the classroom as a whole would be similar to that of the normative group. Examination of Table 37 shows how the class compared in 1963 with the normative fifth grades. In general the self attitude toward learning were more positive than those of the normative group, but they did not feel their classmates shared these attitudes. Attitudes and relationships in the social area were consistently less positive than those of the normative group. The sociometric showed strong rejection patterns between the sexes with a clique pattern among the girls. The Mental Health Index, Self and Group Norms were close to those of the normative group. There tended to be less variation within the

TABLE 37

Dimension Mean Scores, Standard Deviation and Range for Boys, Girls and Combined Classroom at Fall Testing, 1963

		Boys	N=12		Girls	N=10		Combined Class N=22		
		$\bar{x}$	σ	R	$\bar{x}$	σ	R	$\bar{x}$	σ	R
1.	Motivation	109.92	15.48	91-134	112.50	20.92	73-134	111.09	17.74	73-134
2.	Teacher as Learning Facilitator	119.33	18.98	94-146	123.20	13.20	100-140	121.09	16.35	94-146
3.	Conventional Learning	103.75	17.57	76-135	111.20	17.02	83-147	107.14	17.33	76 147
4.	Complementary Learning	94.58	16.91	70-127	95.50	14.44	75-117	95.00	15.47	70-127
5.	Learning Index	111.58	15.84	87-132	114.40	16.61	84-137	112.86	15.87	84-137
6.	Rigid vs. Flexible	94.92	12.23	80-121	96.40	14.01	80-121	95.59	12.77	80 121
7.	Generally Accepting Soc. Clim.	107.92	13.57	90-131	94.20	21.67	49-123	101.68	18.62	49-131
8.	Acceptance Given	98.00	12.42	80-117	88.10	13.64	69-107	93.50	13.64	69-117
9.	Acceptance Received	95.92	10.39	84-121	93.30	25.04	43-121	94.73	18.08	43-121
10.	Social Clim. Index	99.92	11.82	81-116	86.20	24.76	44-111	93.68	19.61	44-116
11.	School Anxiety	116.00	19.54	85-143	106.30	13.21	92-128	111.59	17.30	85-143
12.	Emotionally Supportive Classroom	99.83	12.68	77-115	91.50	14.06	72-115	96.05	13.67	72-115
13.	Mental Health Index	108.25	8.41	97-125	97.70	11.44	83-115	103.45	11.05	83-125
14.	Self Norms	100.75	26.00	48-143	99.00	4.95	62-106	100.00	19.55	48-143
15.	Group Norms	108.17	16.47	91. 150	90.80	15.00	61-106	100.55	17.93	61-150

group on a dimension than was present in the normative group, the most notable exception being among the girls in the social area.

The teacher felt that the level of acting out and aggressive behavior prevented the creation of a suitable learning environment. She also noted considerable underlying hostility not only between the sexes but between individuals.

Interventions

During the fifth grade year efforts were directed toward improving communication between the group members and to building greater acceptance of one another. The first step was to share the general results of the first SCR administration with the class in simplified form. This was a joint effort by the administrative representative, the research staff and the teacher. Discussion of the ideas raised was encouraged. The children responded only to a limited extent but the session conveyed our interest in the group and our acceptance of their expression of ideas.

Individual follow-up interviews were held by the administrative representative. He used the summary sheet and pointed out the pupil's location on a sociogram without peer identification. Each child was permitted to express his ideas on how we could help him and the class, and his feelings. This information was then discussed with the teacher and the research staff.

The research staff held frequent planning and evaluation sessions with the teacher and administrative representative. They also held a parent meeting which focused on the basic results. The goals were to enable the parents to feel themselves a part of the project and to get an expression of their concerns. It was also hoped to mitigate some of the high home pressures for achievement which were at a disruptive level for some of the pupils. The intent was to orient parental efforts in a supportive direction more than to convey specific detailed information. The opportunity for individual consultation with any of the staff was made available and tended to be sought by parents on an informal and spontaneous basis. One main task was to persuade highly achievement oriented parents that the socially directed efforts would not interfere with learning per se. Rather a better learning environment was anticipated for all pupils. Academic efforts were not to be neglected.

The preliminary report to the teacher from the research staff stated:

> "There appears to be an underlying value for learning which can probably be built upon. It is hypothesized that the group members are projecting unsolved problems in their own personality dynamics onto the group relationships. Sibling rivalries, attitudes towards authority and toward members of

> the opposite sex may be the source of much of the acting out and hostility. The pupils' reactions to the teacher may be the product of the reactions to authority or to the mother. As the teacher becomes aware of her reactions to their behavior towards her, she can, by controlling her reactions, teach them that their old methods of manipulating adults can profitably give way to new techniques.
>
> The class may be able to profit from the creation of two person groups rather than completely individualized learning situations as all seem to need to grow in the area of interpersonal relations. A two person group will enable mutual identification and make the responsibility of each in the productive outcome more apparent to each so responsibilities are less easily evaded. If the content is carefully selected to be within the reach of mastery for the members of the group and the efforts are positively recognized in some way by the teacher, by a subgroup of the class, or by the whole class, hopefully, they can provide a source of satisfaction in learning that can be the start of turning this group toward a satisfactory learning environment."

The major intervention focus was the classroom, with joint planning by the teacher and the research staff. Subdivisions of class group activities was designed not only to foster academic growth, but simultaneously to provide possibilities for positive interpersonal relationships. Groups were designed to draw the less liked children into contact with those who showed some acceptance of them. They were also planned so the child could contribute some interest or skill possible for group recognition and utilization. Confrontation of children who disliked one another was avoided.

Non-dominant children were given leadership opportunities at a level for which they were ready. Children who tended to dominate were involved in discussions about how a leader brings the skills of others to the group benefit. These grew out of the election of class officers and the evaluation of their performance of responsibilities. Classroom seating arrangements were also altered periodically on the basis of observed changes in relationships.

The teacher planned a class project oriented around the study of the class which culminated in a class publication. Contributions from each child were encouraged but not pressured. The ensuing "Chain of Thoughts" provided an outlet for a cooperative rivalry between two competitive girls, for expressions of interpersonal values via story and poem and even poked fun at some of the class's sensitive areas without rancor. Throughout the classroom interventions, the teacher's knowledge of the children, her skills and insights were utilized, with the auxilary staff available for support and consultation. The teacher became adept at conscious positive use of situations which teachers usually deal with only intuitively. For example, not only were disruptive combinations noted and separated, but were anticipated and avoided as well, by channeling each of the potential participants into more productive activity.

Changes in the social area were sought without undermining the positive attitude toward learning that existed in this group of children. Active support was necessary for the teacher's efforts to make learning possible for a larger part of the group.

Final Status and Comparative Results

The class status at the time of the spring testing is shown in Table 38. The means and variances for each dimension were compared to those in Table 37 and between sexes within test by means of T-tests and F-ratios.

The Learning Index

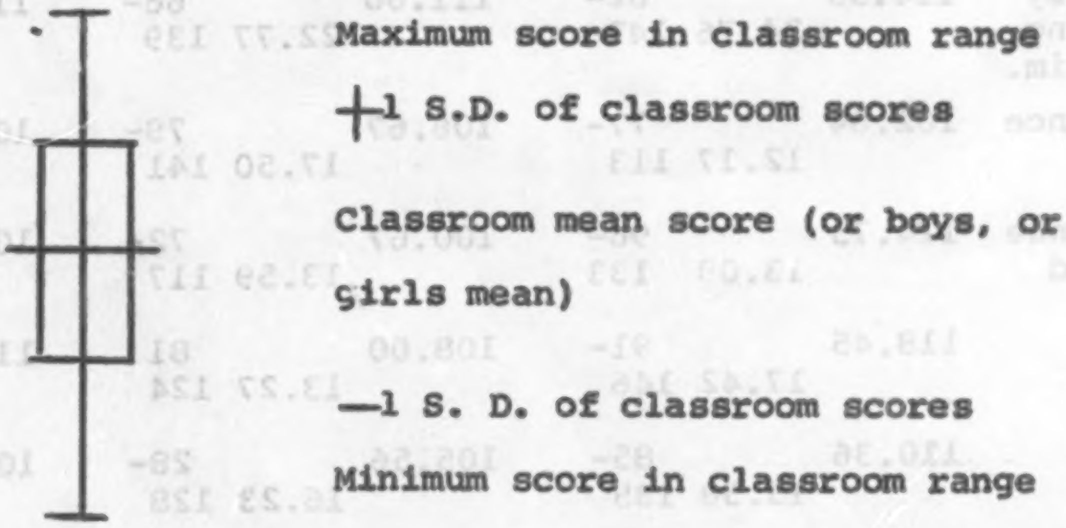
There were no significant changes from fall to spring nor any significant differences between boys and girls on the Learning Index or any of its subdimensions. The group started and remained more positive than the normative group. They dropped below the normative group only in their perception of Complementary Learning which is concerned with requirements of innovation, divergency and utilization. Other subdimensions included in the Index are Motivation (interest and involvement in classroom activities, liking for the work and the classroom), Teacher as a Learning Facilitator (gives attention, motivates, keeps order), and Conventional

TABLE 38
Dimension Mean Scores, Standard Deviation and Range for Boys, Girls and Combined Classroom at Spring Testing, 1964

	Boys N=11			Girls N=9			Combined Classroom N-20		
	x̄	σ	R	x̄	σ	R	x̄	σ	R
1. Motivation	111.45	15.83	85-134	116.78	20.71	73-140	113.85	17.88	73-140
2. Teacher as Learning Facilitator	117.00	16.12	94-140	122.11	11.74	100-134	119.30	14.20	94-140
3. Conventional Learning	91.45	17.25	59-118	106.33	15.40	83-129	98.15	17.72	59-129
4. Complementary Learning	94.55	15.15	70-127	93.11	16.75	75-122	93.90	15.47	70-127
5. Learning Index	107.73	15.80	84-129	113.00	17.12	84-134	110.10	16.19	84-134
6. Rigid vs. Flexible	103.55	17.19	80-148	108.78	21.68	67 134	105.90	18.99	67-148
7. Generally Accepting Soc. Clim.	114.55	24.76	82-147	111.00	22.77	66-139	112.95	23.33	66-147
8. Acceptance Given	102.64	12.17	77-113	106.67	17.50	79-141	104.45	14.53	77-141
9. Acceptance Received	114.73	13.09	96-133	100.67	13.59	72-117	108.40	14.81	72-133
10. Social Climate	118.45	17.42	91-146	108.00	13.27	81 124	113.75	16.20	81-146
11. School Anxiety	110.36	15.58	85-135	105.56	16.23	28-128	108.20	15.65	78-135
12. Emotionally Supportive Classroom	103.55	14.44	72-124	95.22	19.32	68-119	99.80	16.88	68-124
13. Mental Health Index	108.45	17.18	73-129	100.00	18.21	73-129	104.15	17.71	73-129
14. Self Norms	93.64	15.64	70-121	102.11	15.33	84-121	97.45	15.70	70-121
15. Group Norms	106.27	19.38	76-128	90.78	16.72	61-113	99.30	19.44	61-128

Interpretation of SCR Graphic Figures

The data from Tables 37 and 38 are superimposed upon basic graphs which represent the normative population. The normative group mean is 100, the standard deviation 20. The performance of the fifth grade class in the fall and in the spring relative to the normative fifth grades is represented for each dimension by a figure that indicates the classroom standard deviation and the range of scores.


Maximum score in classroom range
+1 S.D. of classroom scores
Classroom mean score (or boys, or girls mean)
—1 S. D. of classroom scores
Minimum score in classroom range

For the case studies, the position of the individual on selected dimensions is plotted relative to the normative group.

Learning (memorization and requirement of convergent thinking). Figure 3 presents the pre-post comparisons for this index.

Social Climate Index

Significant changes occurred on the Social Climate Index and on each of its subdimensions which can be seen in Figure 4. These include Rigid Versus Flexible, (re individual choice in activities and pace of work), Generally Accepting Social Climate (class interpersonal support and friendliness), Acceptance Given (amount of liking given to other pupils in the classroom), and Acceptance Received (amount of liking received from other pupils in the classroom).

The learning environment was seen as more flexible in the spring than it was in the fall by both boys and girls, the difference for the class as a whole being significant at the .05 level. The increased standard deviation would indicate a differential degree of change over individual class members, but the F test was nonsignificant. The boys' perception of the Accepting Social Climate became more variable from fall to spring, the F test of the variances reaching .05 significance. The girls' means were consistently lower than the boys, but not significantly so. The boys' mean increased from 107.92 to 114.55, the girls' from 94.20 to 111.00.

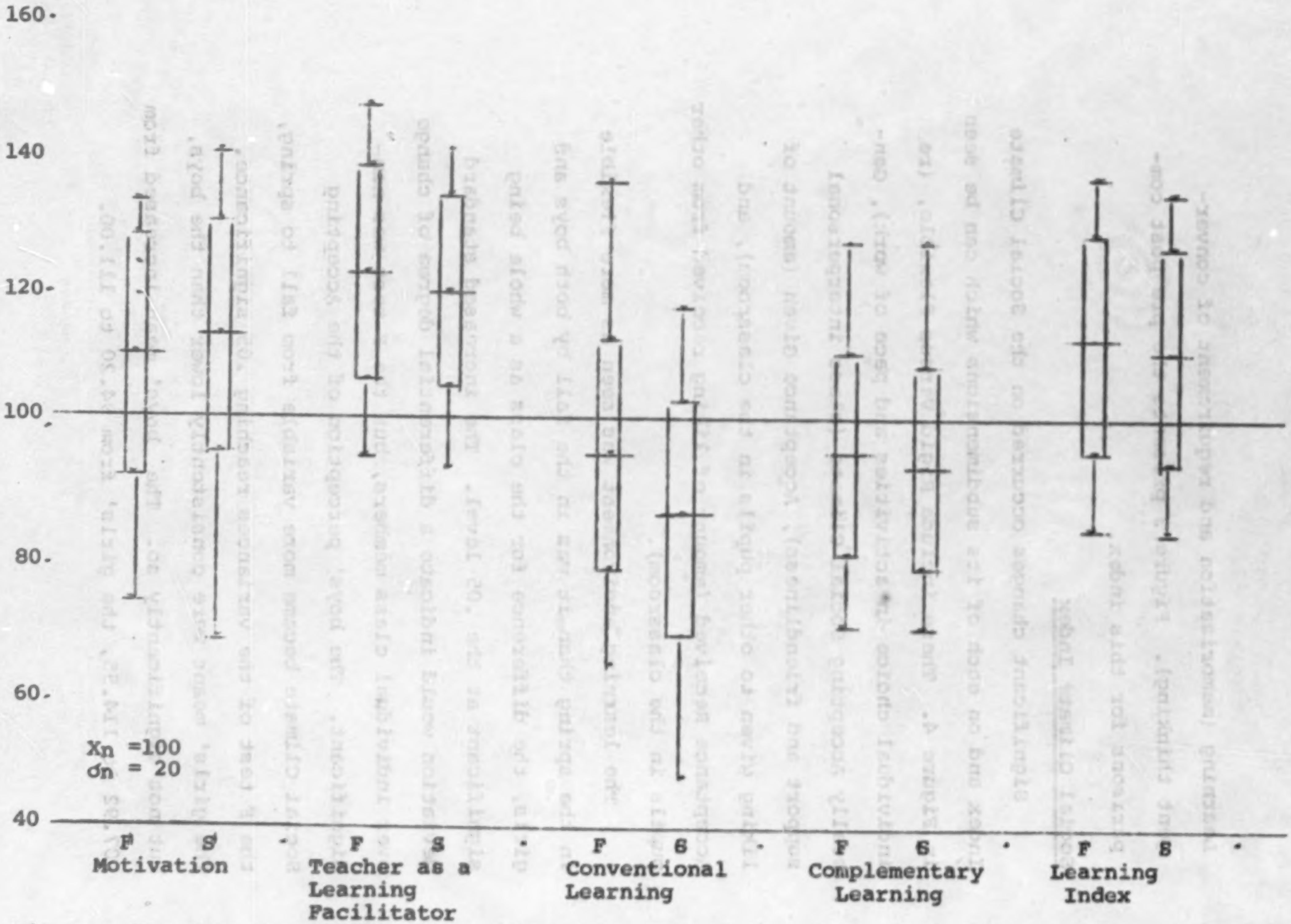


Figure 3 Pre-Post Comparison of Learning Index Dimensions (For this and subsequent figures, the range of one standard deviation above and below the mean is represented by the areas enclosed by the rectangles. The mean scores are indicated by the solid lines running through the rectangles.)

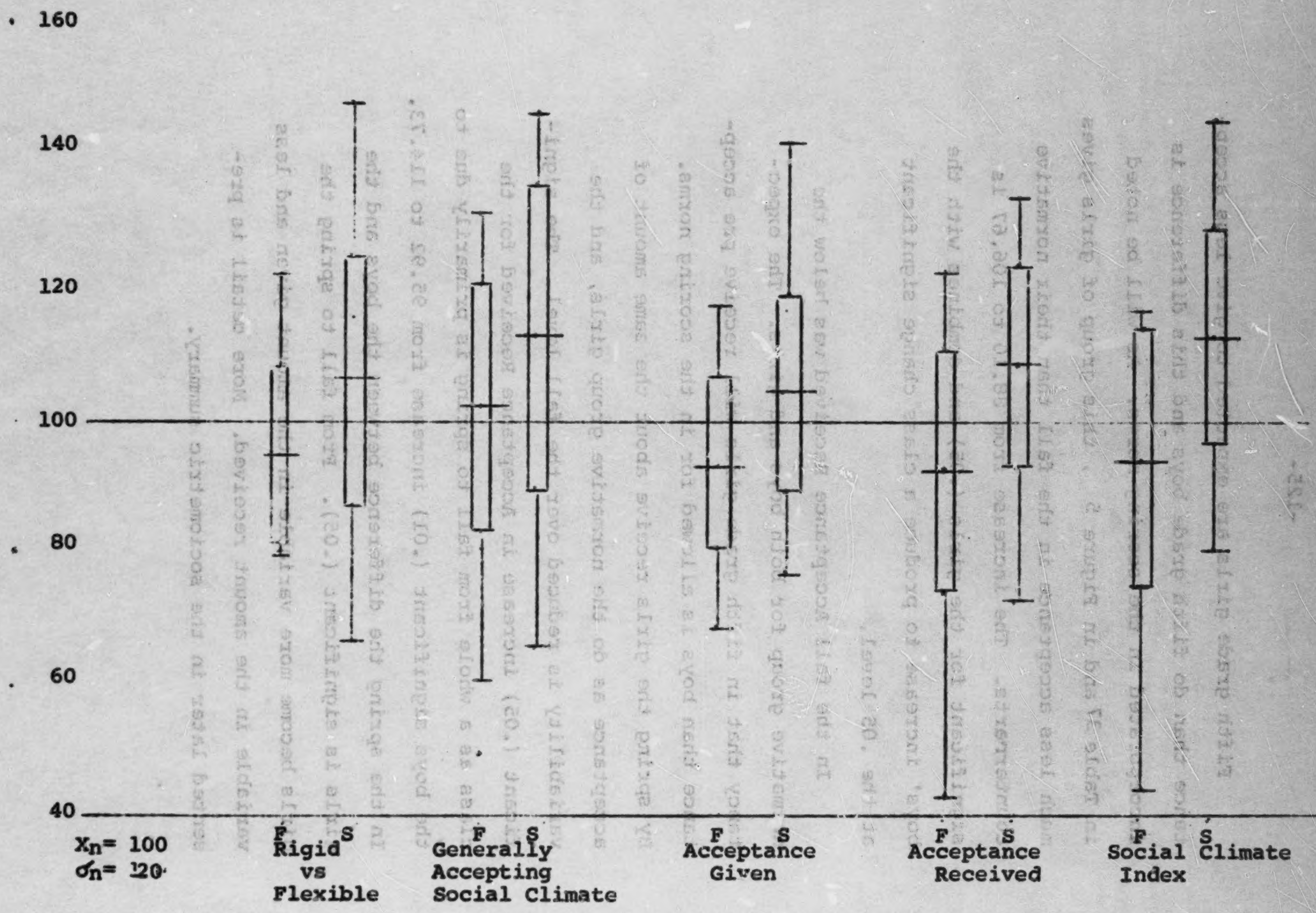


Figure 4 Pre-Post Comparison of Social Climate Index Dimensions

3

Fifth grade girls are expected to give less acceptance than do fifth grade boys and this difference is incorporated in the scoring norms. As will be noted in Table 37 and in Figure 5 , this group of girls gives much less acceptance in the fall than their normative counterparts. The increase from 86.10 to 106.67 is significant for the girls (.05) and combines with the boys' increase to produce a class change significant at the .05 level.

In the fall Acceptance Received was below the normative group for both boys and girls. The expectancy that in fifth grade girls will receive pre acceptance than boys is allowed for in the scoring norms. By spring the girls receive about the same amount of acceptance as do the normative group girls, and the variability is reduced over the fall level. The significant (.05) increase in Acceptance Received for the class as a whole from fall to spring is primarily due to the boys significant (.01) increase from 95.92 to 114.73. In the spring the difference between the boys and the girls is significant (.05). From fall to spring the girls become more variable in the amount given and less variable in the amount received. More detail is presented later in the sociometric summary.

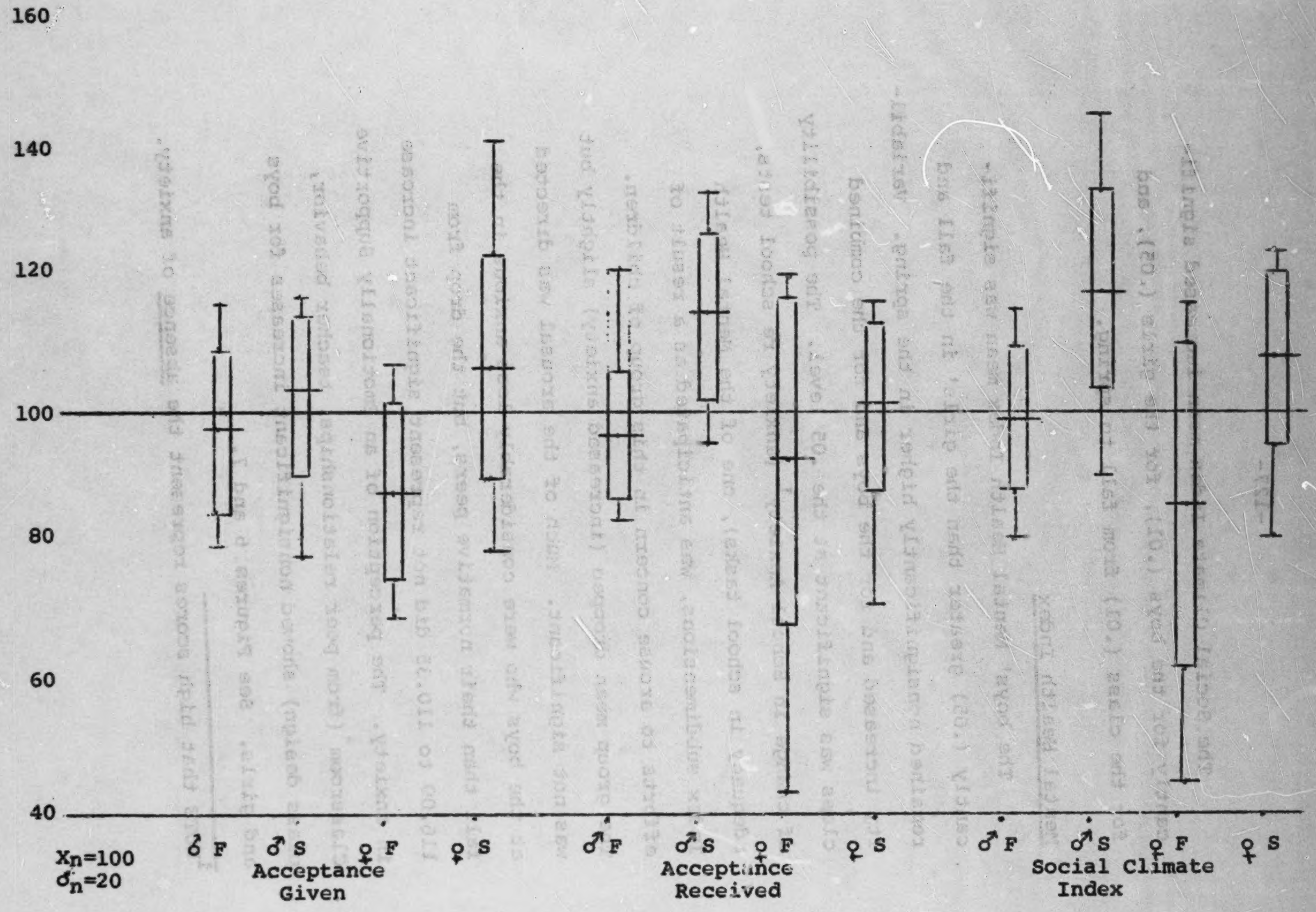


Figure 5. Pre-Post Comparison of Boys and Girls for Some Social Climate Dimensions

The Social Climate Index mean increased significantly for the boys (.01), for the girls (.05), and for the class (.01) from fall to spring.

Mental Health Index

The boys' Mental Health Index mean was significantly (.05) greater than the girls' in the fall and remained nonsignificantly higher in the spring. Variability increased and for the boys and for the combined class was significant at the .05 level. The possibility of change in School Anxiety[1] (anxiety re school tests, adequacy in school tasks), one of the Mental Health Index subdimensions, was anticipated as a result of efforts to arouse concern in this group of children. The group mean dropped (increased anxiety) slightly but was not significant. Much of the arousal was directed at the boys who were considerably less anxious in the fall than their normative peers, but the drop from 116.00 to 110.35 did not represent significant increase in anxiety. The perception of an Emotionally Supportive Classroom (from peer relationships, teacher behavior, class design) showed nonsignificant increases for boys and girls. See Figures 6 and 7.

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[1] NOTE that high scores represent the absence of anxiety.

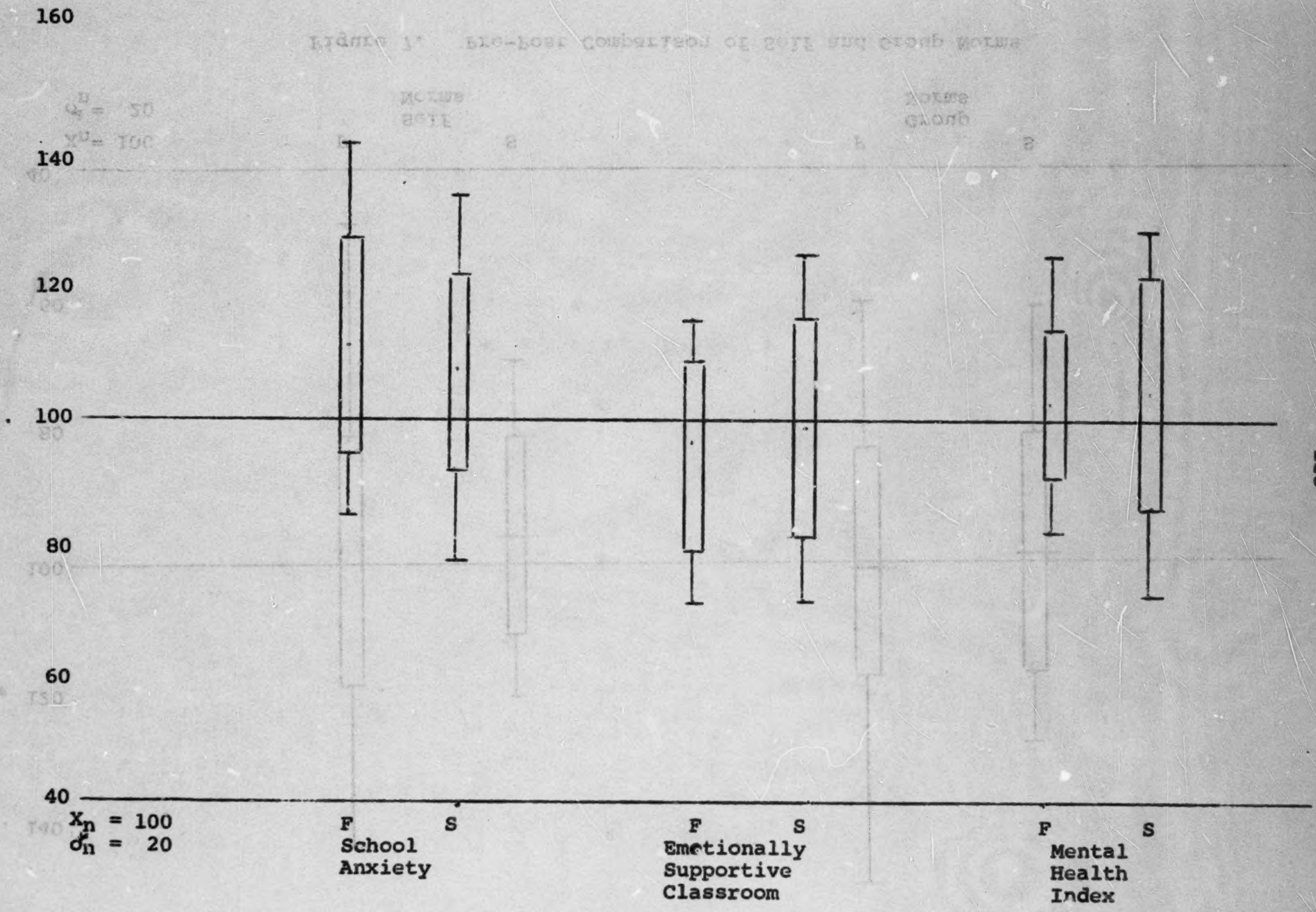


Figure 6. Pre-Post Comparisons of Mental Health Dimensions

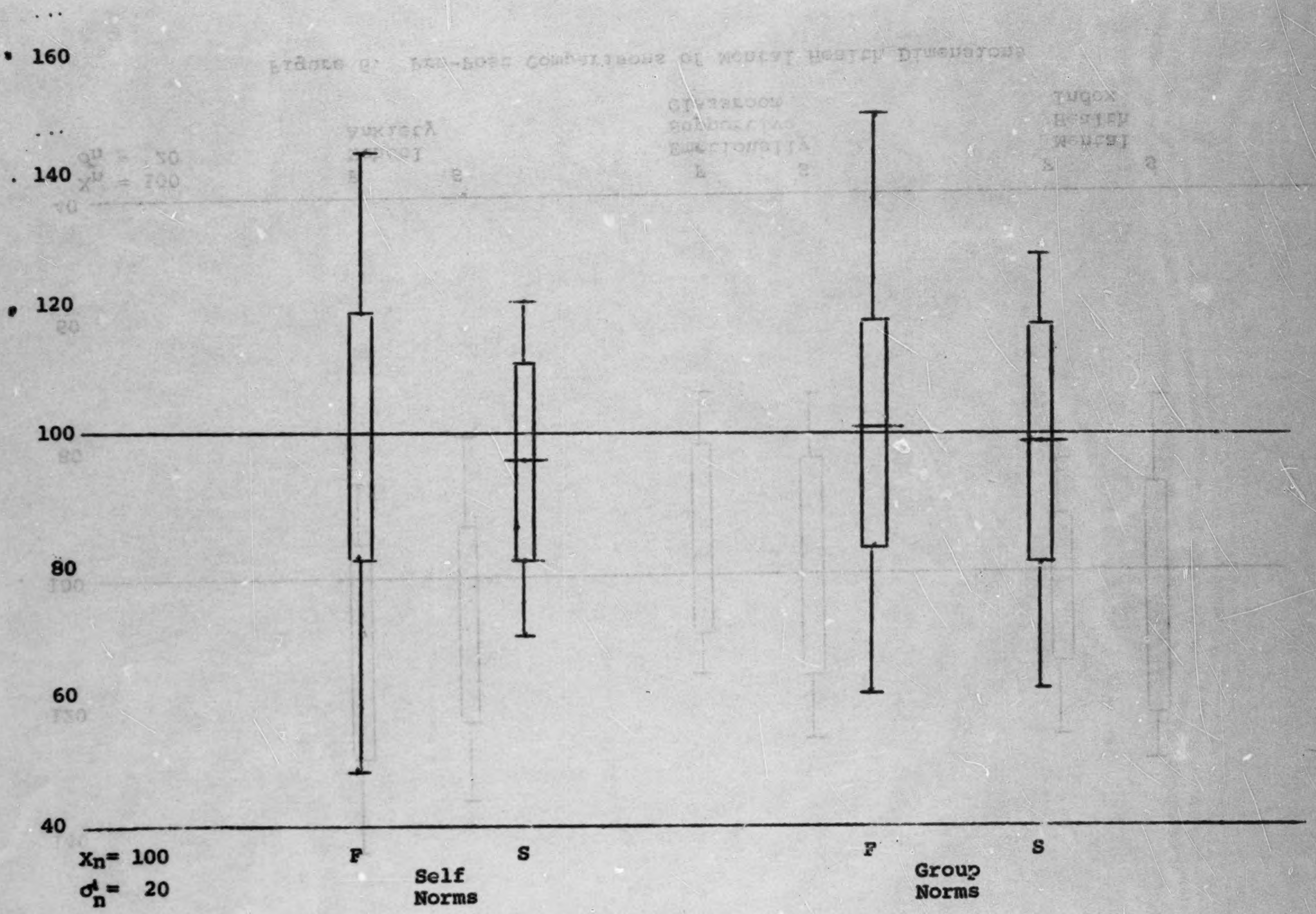


Figure 7. Pre-Post Comparison of Self and Group Norms

Correlational Changes

The changes in correlations within Index dimensions and between dimensions across indices from the fall to the spring testing helps to indicate how the group's experience realigned perceptions. Table 39 shows these changes in detail. A few are highlighted. Motivation became more closely associated with both the Teacher as a Learning Facilitator and with the Learning Facilitator and with the Learning Index. The teacher became less associated with Complementary Learning and more with the Generally Accepting Social Climate. Motivation became more closely related to the Generally Accepting Social Climate in the spring, remained significantly associated with Acceptance Received and became dissociated from the Emotionally Supportive Classroom structure.

Generally Accepting Social Climate and Acceptance received remained firmly associated with the Social Climate Index and with each other. Both lost their significant associations with Emotionally Supportive Structure. The relationship between Acceptance Given and the Index diminished although remaining significant, but the former became dissociated from the Generally Accepting Social Climate. In the spring, the greater the classroom flexibility perceived, the less

TABLE 39

*Sig. 05 **Sig.01

Fall and Spring Dimension Intercorrelations Pre-Test Post-Test Intra-Dimension Correlations

Dimension	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	21	22	23	24
1. F	.43	.51*	.02	-.02	.64**	.33	.32	.39	.49*	.54**	-.21	.62**	.41	.13	-.04					.07
S		.68**	.07	.30	.82**	-.29	.70**	-.02	.46*	.51	.34	.36	.40	.47*	.25	.12	-.01	-.26	.09	.15
2.		.49*	-.08	.64**	.89*	.55**	.05	.4	.01	.25	-.32	.20	-.05	.40	.10					.12
			.06	.21	.76	-.20	.58	.25	.32	.55*	.04	.20	.15	.61**	.44	.27	-.21	.16	-.01	.18
3.			.31	-.14	.19	.40	-.42	-.08	-.28	-.29	-.07	-.17	-.20	-.50*	-.63*					.22
				.01	.32	.07	.12	.12	-.30	-.13	-.02	-.28	-.20	.43	-.19	.17	.07	-.33	.17	.43
4.				.66**	.66*	.30	-.08	.08	-.20	-.04	-.13	-.29	-.34	.33	.19					.03
					.65**	.14	-.25	.27	.11	.37	.23	.01	.10	.20	.37	.06	.14	-.27	.1	-.05
5.					.58**	.63**	.03	.37	.06	.26	.29	.21	.01	.22	-.04					.09
						-.12	.66**	.22	.31	.57**	.27	.17	.23	.63**	.40	.20	-.01	-.23	.14	.17
6.						.47*	-.16	.08	-.07	.06	-.43	.16	-.19	.13	-.25					.06
							-.58**	.13	-.53*	-.32	-.01	-.33	-.24	.03	-.09	.06	-.10	.04	-.01	.14
7							.13	.47*	.54**	.80**	-.15	.45*	.29	.04	.44*					-.38
								-.05	.59**	.67**	-.04	.35	.26	.55*	.40	.12	-.09	-.15	.29	-.08
8.								-.12	.23	.73**	-.17	.34	.18	.21	.35					-.37
									-.10	.48*	-.03	-.22	-.17	-.08	.13	.67**	-.06	-.11	.12	.14
9.									.57**	.78**	-.12	.56**	.43*	.08	.02					-.07
										.76**	-.01	.33	.22	.25	.19	.01	-.15	.12	.25	-.49*
10.										.36	-.23	.61**	.38	.17	.31					-.36
											-.03	.20	.12	.32	.42	.40	-.23	.04	.36	-.33
11.											.25	-.30	.49*	-.31	.13					-.29
												.51*	.80**	-.16	.24	-.27	.22	-.05	-.32	-.16
12.												.19	.69**	.32	.16					-.31
													.93**	.08	.45*	.01	.51*	.05	-.52*	-.25
13.													.34	.06	.24					-.49
														-.02	.42	-.11	.45*	.02	-.51	-.24
14.														-.19	.38					-.05
															.06	.10	-.05	-.05	.03	.28
15.															.31					-.51*
																.02	-.10	.26	.09	-.41

Fall N = 22   Spring N = 20   Pre-Post N = 20 acceptance is received and the less there is a perception of an accepting social climate. Flexibility also lost its significant correlation with the anxiety subdimension from fall to spring.

The Mental Health Index became more cohesive with higher correlations occurring between the subdimensions and between subdimensions and the Index. In the fall, the higher the anxiety level, the more the pupils saw the classroom structure as supporting. By spring, absence of anxiety was significantly correlated with supportive structure. The correlation of structure with the Mental Health Index reached .928 in the spring.

The intra-dimension fall-spring correlations indicate that the learning dimensions remained the most stable. The Learning Index fall-spring correlation of .58 was significant .01 as was the perception of Complementary Learning. The teacher as a Learning Facilitator was significant at .05 from fall to spring. Acceptance Received was significantly correlated (.01) at .57 and the pre-post correlation on Rigid versus Flexible was significant .05. Perception of the Generally Accepting Social Climate and Acceptance Given changed sufficiently, however, to make the correlation of .36 on the Social Climate Index non-significant. The Group and Self Norms and the Mental Health dimension norms were not significantly correlated from fall to spring.

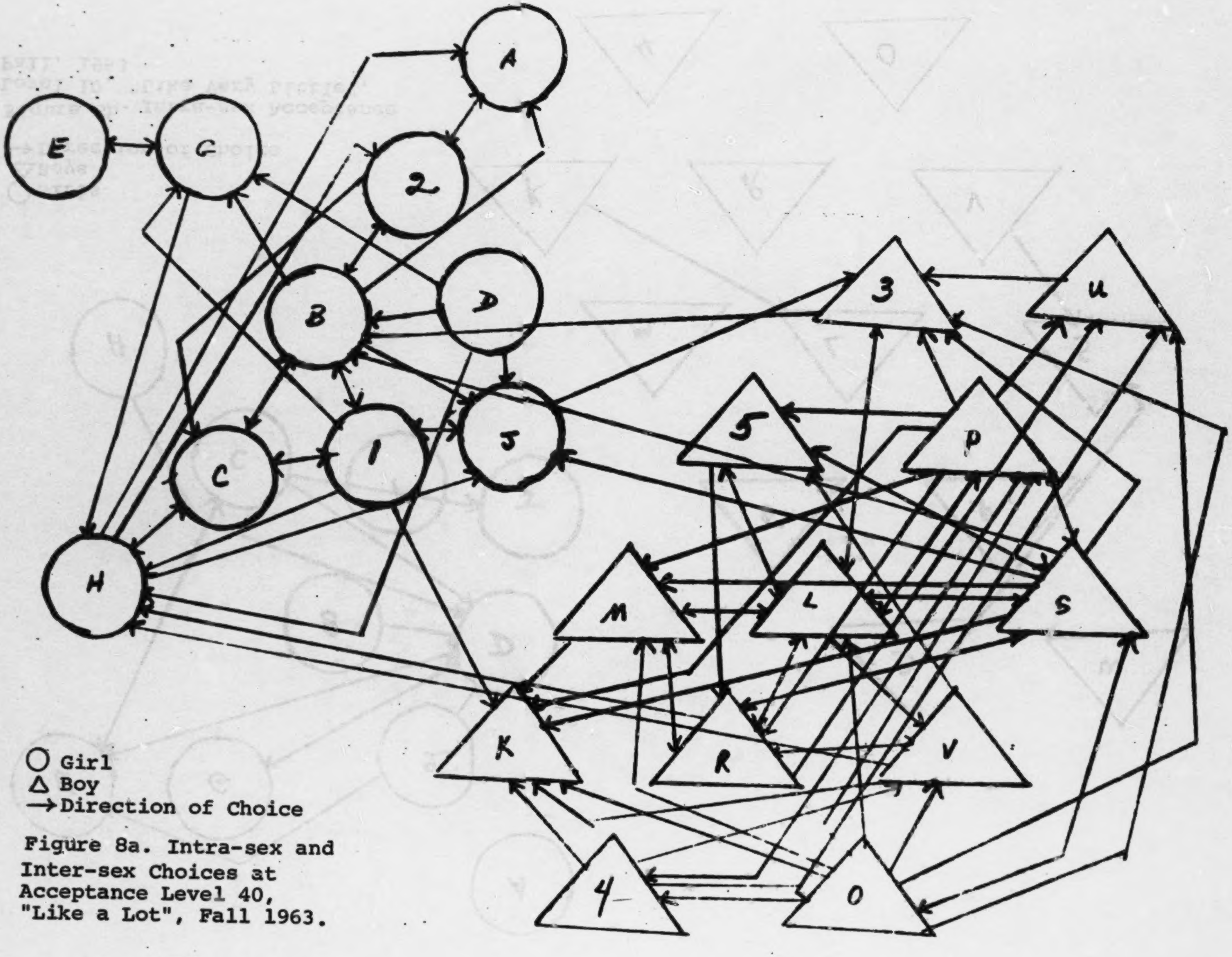
Sociometric Summary

The sociometric analysis showed the changes in interpersonal relationships most clearly. Raw scores ranging from a possible 10 (like very little) to 40 (like a lot) were used as the basic data. Each pupil received a score of 10, 20, 30 or 40 from each other pupil. The scores the pupil gave to others were averaged for "Acceptance received". Sociograms based only on scores of 10 and on scores of 40 were drawn and compared for fall and spring.

Figures 7-11 show the pupils selected at level 40 and rejected at level 10 for the fall and spring testings. An increase in the number of "like a lot" choices and a decrease in the number of "like very little" choices will be noted within and across sex lines. Table 40compares the fall and spring averaged acceptance received. The mean Acceptance Given by the class rose from 24.2 to 26.99 from fall to spring.

Table 40 Comparison between fall and spring Acceptance Received

	Rec'd from Class	Rec'd by boys		Rec'd by girls	
		From Boys	From Girls	From Boys	From Girls
Fall	23.6	32.0	15.8	20.3	29.7
Spring	27.8	33.9	22.5	21.5	28.9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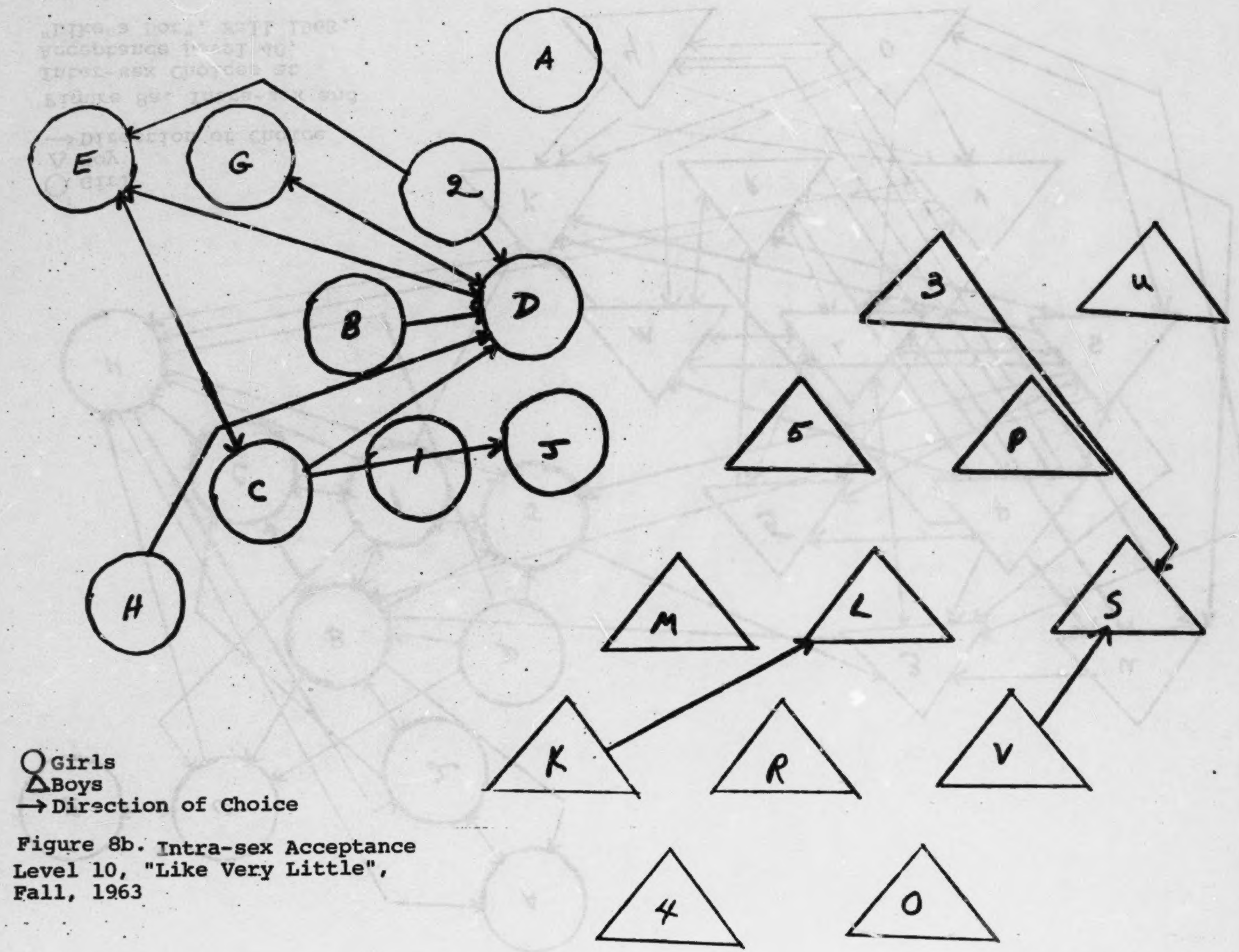
○ Girl
△ Boy
→Direction of Choice

Figure 8a. Intra-sex and Inter-sex Choices at Acceptance Level 40, "Like a Lot", Fall 1963.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○ Girls
△ Boys
→ Direction of Choice

Figure 8b. Intra-sex Acceptance
Level 10, "Like Very Little",
Fall, 1963

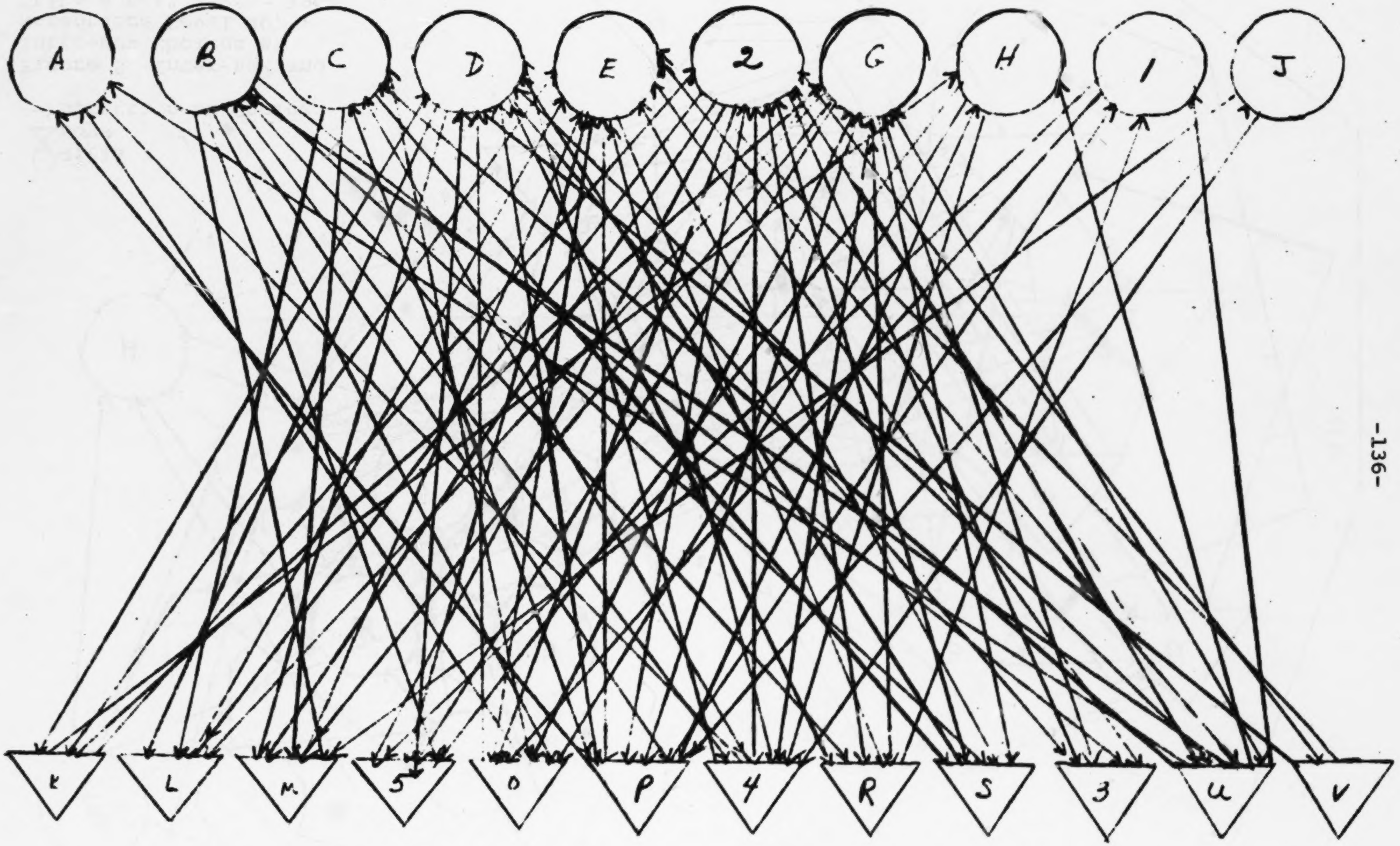
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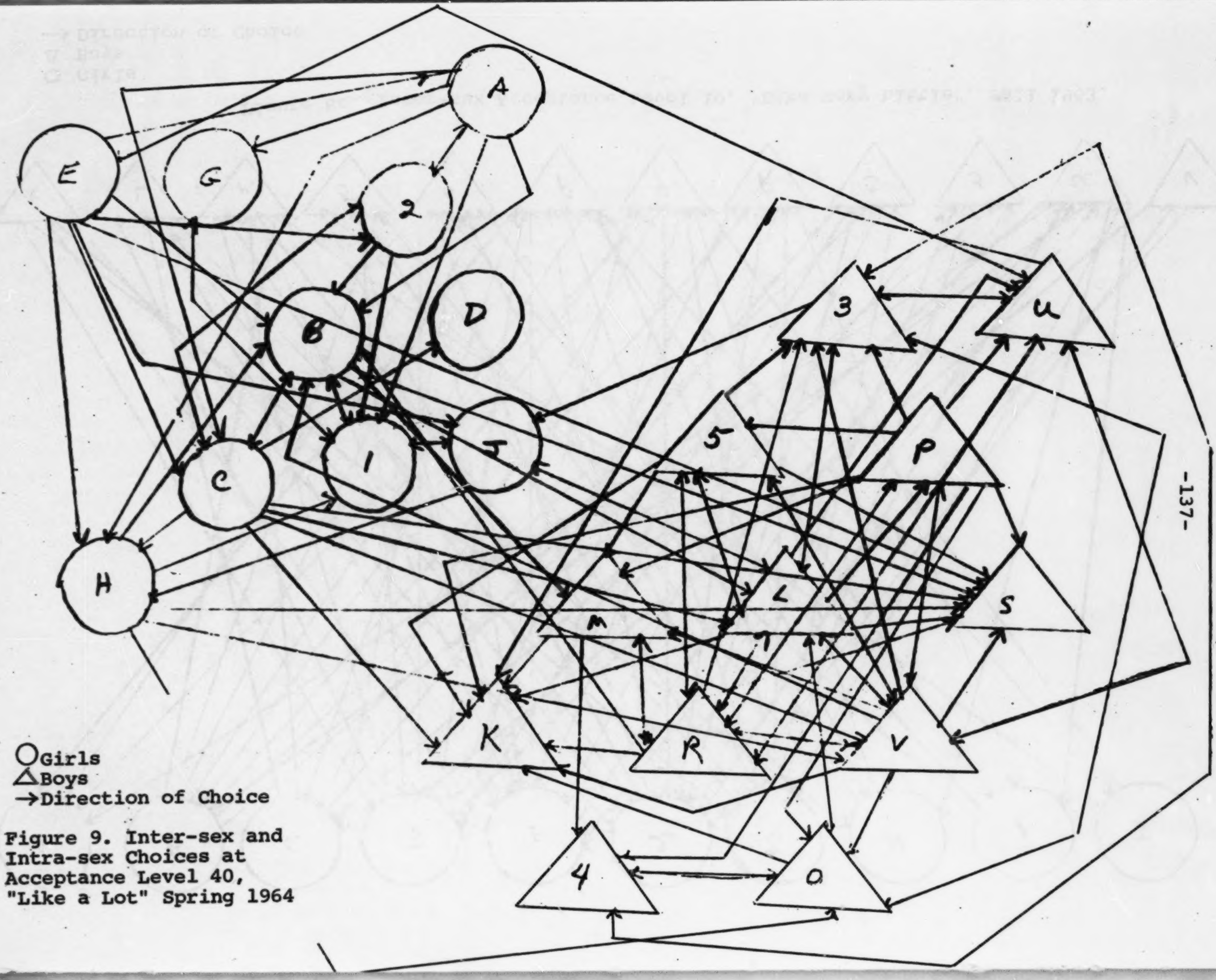
Figure 8c. Inter-sex Acceptance Level 10, "Like Very Little", Fall 1963.

○ Girls
Δ Boys
→ Direction of Choice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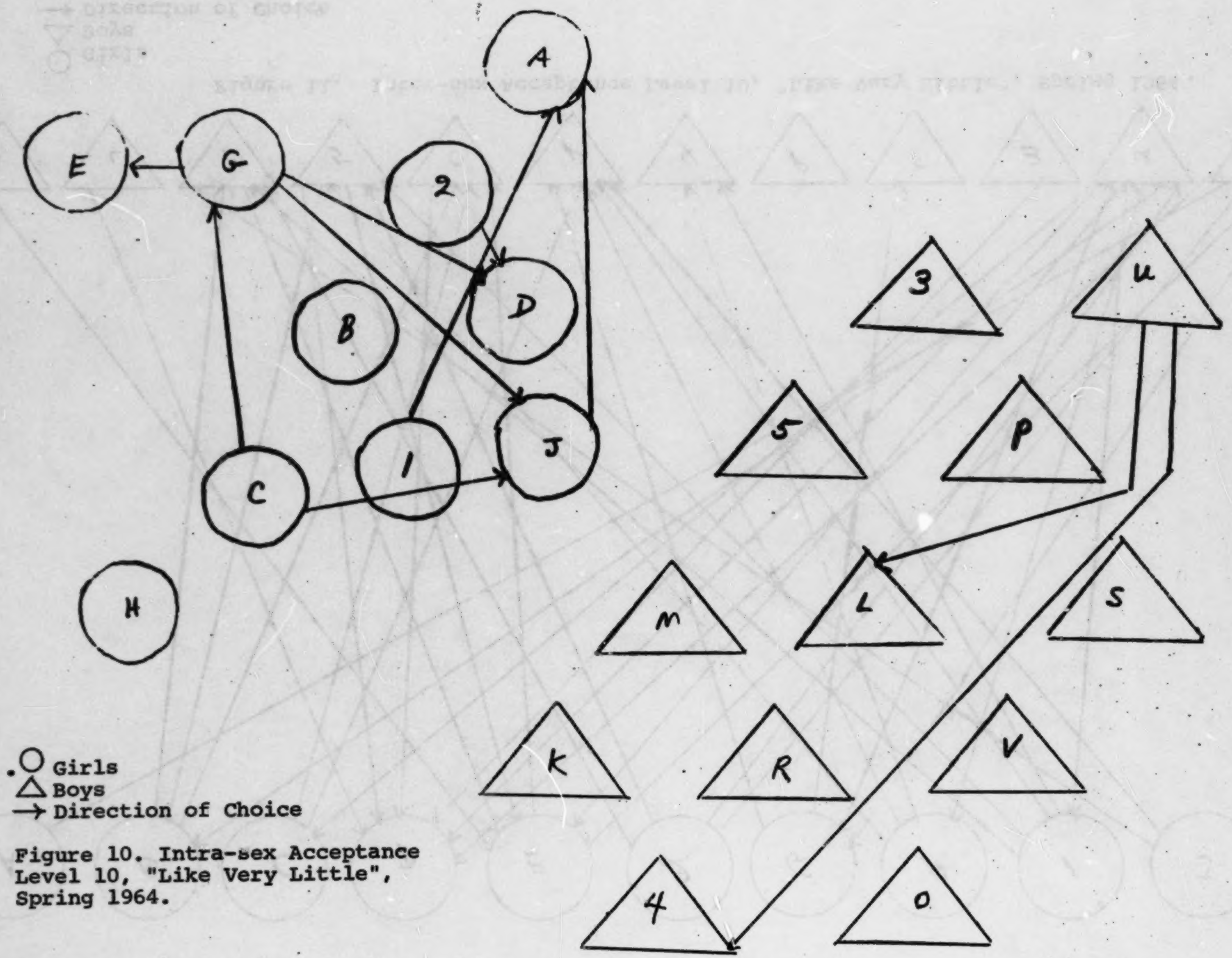
○Girls
△Boys
→Direction of Choice

Figure 9. Inter-sex and Intra-sex Choices at Acceptance Level 40, "Like a Lot" Spring 1964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Girls
Boys
Direction of Choice

Figure 10. Intra-sex Acceptance Level 10, "Like Very Little", Spring 1964.

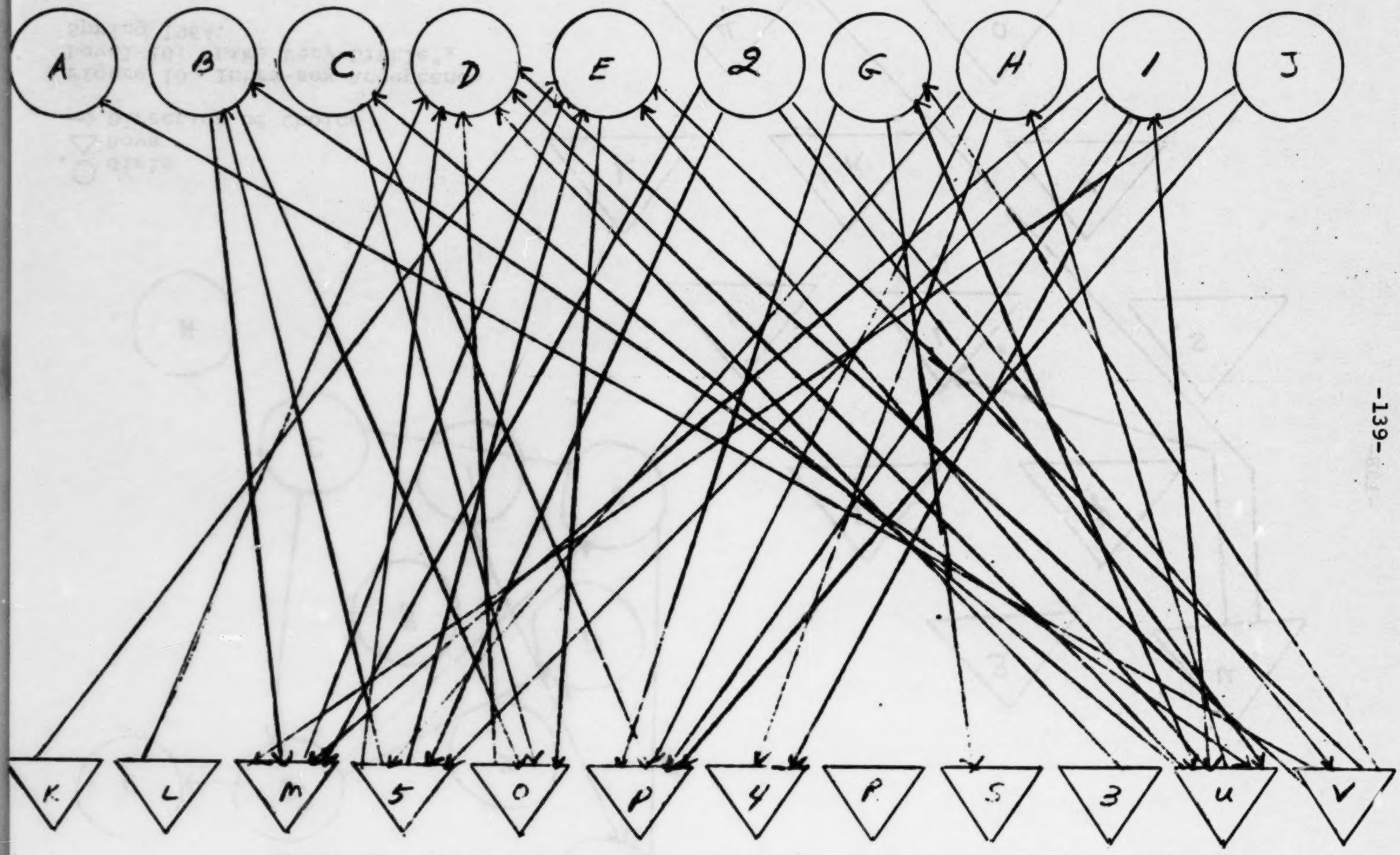
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Figure 11. Inter-sex Acceptance Level 10, "Like Very Little", Spring 1964.

○ Girls
△ Boys
→ Direction of Choice

Table 41 dichotomizes the group on the average acceptance given and average acceptance received in the fall. This placed each pupil in one of four categories, High-High, Low-Low, High Given-Low Received or Low-Given-High-Received. The direction of movement is shown in parentheses. For each pupil, the spring raw scores were taken relative to the fall cut-scores.* If one sees the High-High category as the most desirable, in the fall it included only 27.3% of the group. By spring it contained 6.8.1%. The percent of children in the Low-Low category dropped from 18.1% to 9%. The categories of intermediate desirability showed substantial drops in percent contained due to the movement of children toward the more positive group. High Given-Low Received included 22.7% in the fall, only 4.5% in the spring. Low Given-High Received included 3.8% in the fall, only 18.1% in the spring.

Of the 27.3% of the children in the High-High in the fall, only one moved in a negative direction. Starting and remaining in High-High were 22.7% of the total group. Whatever their category, 18.1% showed no change and remained at less than an optimal level. Moving positively in giving only were 22.7%, in receiving only 18.1%, while 9% moved positively on both dimensions. Two children in the group (9%) moved toward giving less in spring than they did in the fall, but their receiving category remained unchanged.

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*Therefore, a pupil in the High Given-Low Received category in the fall whose "given" score remained unchanged, but whose "received" score was 25.2 in the spring would be shown as moving to the High-High category.

Table 41 Fall to Spring Movement on Acceptance Given and Received

ACCEPTANCE RECEIVED	ACCEPTANCE GIVEN	
	LOW (<24.2)	HIGH (≥24.2)
HIGH (≧23.6)	7 pupils fall 4 moved to HH (→) 4 pupils spring	6 pupils fall 1 moved to H_RL (←) 15 pupils spring
LOW (<23.6)	4 pupils fall 2 moved to HH(↗), 1 to L_RH_G (↘) 2 pupils spring	5 pupils fall 4 moved to HH (↑), 1 to L_RL_G (←) 1 pupil spring

INTERPRETATION OF THE SOCIOMETRIC DIAGRAMS

The circles in the sociometric diagrams represent girls, the triangles boys. The connecting arrows show the direction of choice at the specified level of acceptance. A double-headed arrow indicates a mutual choice. Acceptance level 40 is the most favorable choice possible, "Like a Lot". Acceptance level 10 is the least favorable choice possible, "Like Very Little". The intermediate categories of "Like Some" (Level 30) and "Like a Little" (Level 20) have been omitted from the diagrams, but were used in the computation' of the Acceptance Given and Acceptance Received Scores. To facilitate comparisons across diagrams, each child has been given an identifying letter. Those cited in the case studies have been given their case number.

ACHIEVEMENT DATA

A brief look at the academic performance of the group would seem to be in order. California Achievement Tests are administered every year, independent of the experimental study. Separate "age scores" based on the test norms are given for reading, spelling, language and arithmetic as well as a mean age of the combined areas. These tests were given in the fall to fifth graders and again sixteen months later covering the period of the special study. The mean chronological age at the time of the first testing was 124 months. The mean reading age was 146, spelling age 143, language age 127 and arithmetic age 130. The mean of the mean ages was 140 months. At the end of fifteen months when the chronological age mean was 139 months, the respective age means were reading 161, spelling 157, language 160 and arithmetic 153. The mean of the mean ages was 158 months, a gain of 18 months over that fifteen months previously. For the pupils common to both groups, the average gain over all four areas was 15 months. Arithmetic gains average 20 months, language, 15 months, spelling 12 months and reading 11 months. Inspection of the gain and loss scores of individual pupils indicated the regressions occurred among the two most competitive girls.

DISCUSSION OF INTERVENTION PERIOD

The results suggest that intervention procedures may be designed to be selectively effective. The changes that occurred on the SCR dimensions are compatible with the focus on increasing communication and building interpersonal relationships. The closer alliance of motivation with the Accepting Social Climate and the Teacher as a Learning Facilitator shown in the correlational changes support the interpersonal emphasis although the mean scores on the Learning Index and its subdimensions did not change significantly.

The Social Climate Index changes invite further speculation. One is tempted to attribute the perceived drop in flexibility by the boys to a response to the necessity for firm control hypothesized to have occurred as a result of their high activity level and to the endeavor to integrate the fourth grade classroom by several teachers who tended to view the class and particularly the boys as difficult. The correlation of flexibility with high school anxiety in the fall ($r=-429$*) which was significant .05 and which diminished to $r=-.006$ to be replaced by significant negative correlations with Generally Accepting Social Climate ($r=-.575$, p .01) and Acceptance Received ($r=-.530$, p .05) in the spring led to examination of the correlation with Emotionally Supportive Structure which was a non-significant $r=-.334$ in the spring. One might speculate a growth toward flexibility and nondependency on structure per se for the group. At the same time the tendency for those who perceive high flexibility to see the Social Climate as less accepting, to receive less acceptance and to see structure as less supportive may reflect their personality need for greater structure and rigidity. A given classroom may need to find its optimal level of structure, - the amount varying across classrooms as a function of the pupils and the teacher in interaction.

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* a high score on this dimension indicates "absence of anxiety".

The change in Generally Accepting Social Climate from fall to spring, although nonsignificant, seems to be accelerated over the changes from third and fourth to fifth grades. This conceptually complex perceptual dimension might be expected to show some time lag depending on the sensitivity and maturity of the perceivers. This hypothesis receives some support by the increase in variance noted among the boys.

The changes in Acceptance Given and Acceptance Received show both the responsitivity of the group to situational factors and the resistance to change rooted in the personality of some of the individual children. The classroom intervention is designed to provide a positive mileau, but not to provide therapy for more basic disturbance. Acceptance Given changes may not be immediately reflected in changes in Acceptance Received by that individual child or subgroup of children, especially where they fall into a role such as scapegoat or out-group in the classroom structure. As Table 5 showed, the increase in Acceptance Given by the girls was directed primarily to the boys, the boys' increase being distributed across classmates of both sexes. The low Acceptance Given by the girls compared to normative group girls, if the result of the highly achievement oriented parental population, raises the question of a potentially undesirable outcome from the current emphasis on achievement and competition. Are children failing to learn to value interpersonal cooperative relationships? If so, the long range effects on their personal Mental Health and their fulfilling of adult roles merit consideration.

The drop in School Anxiety prior to the fall SCR administration may be partially a product of the teacher's concern. It is possible to view the increase in anxiety during the fifth grade as achieving an optimal level of pupil concern without the disruptive effects of anxiety resulting from internal tension, parental, peer or school pressures. A time lag would be expected in changes in perceptions of the classroom structure and the teacher's behavior which would account for nonsignificant change in the Emotionally Supportive Classroom. The changes which did occur were inadequate to change the Mental Health Index significantly.

The importance of factors other than the direct intervention must not be overlooked. One should not underestimate the importance of concern per se in effecting change irrespective of methodology. The concern of the teacher which led her to seek aid could be a factor in the significant longitudinal changes occurring from third grade and fourth grade to the time of the first SCR administration. The past experience of the group and their maturation may also be contributory. The placing of third grade children in combined third-fourth grade classrooms seems to enhance Nach, but its effects on perceptions of school as revealed by the SCR and on self concept are possibly detrimental. Perhaps one needs to pay closer attention to individual self esteem as children are taught to relate to others and to communicate across such barriers as age, sex, race, class, creed.

Longitudinal Review of 3rd and 4th Grade Data

Access to SCR data from the group's third and fourth grade experience provides additional insight and raises some provacative questions. The changes on the Indices are shown in Figure 12. Each of the yearly comparisons

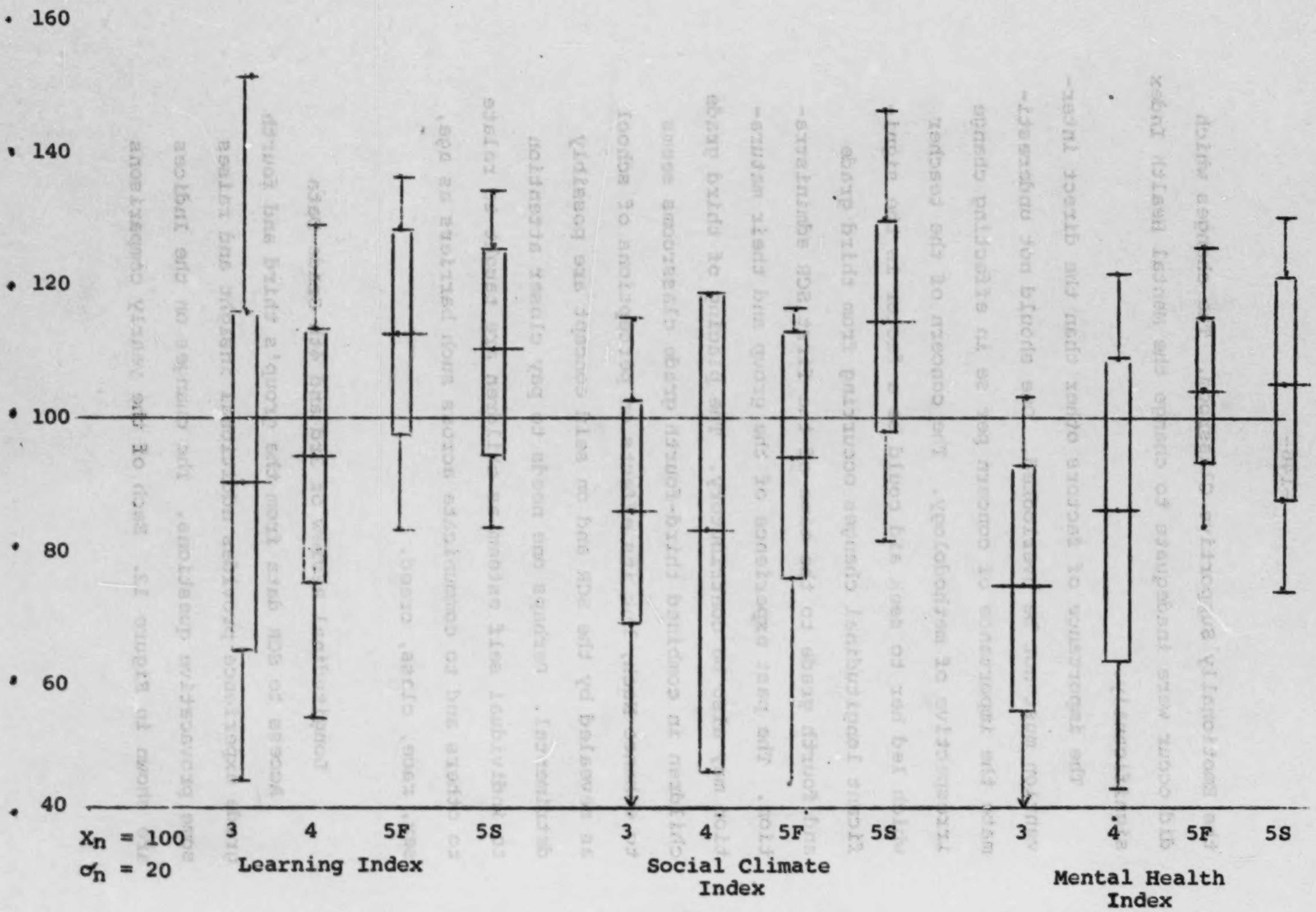

Figure 12. Longitudinal Comparison of Indices

is with the normative group at the same grade level. It will be noted that the class under study was below the normative mean on all Indices when they were in third and fourth grades. (See Table 42).

In fifth grade, the Learning Index was significantly (.01) above that for either third or fourth grade. A significant F ratio (.05) indicated that the fifth grade was more homogeneous than the third grade, possibly because the group was split between two third-fourth grade groups. Motivation increased each year, the difference from third to fifth grade being significant .01. The fifth grade perceived the teacher as a learning facilitator at a significantly (.01) higher level than did the group in either the third grade or fourth grade. Conventional Learning showed a significant (.05) increase from fourth grade to the fall of fifth grade. The perception of Complementary Learning was significantly (.05) less in fourth and fifth grades when compared with the third grade.

The Social Climate Index in third and fourth grades was not significantly different from that in the fall of fifth grade, i.e., prior to the intervention. The third, fourth and fall fifth grade means were significantly below that in spring fifth. Perceived flexibility dropped from third grade on especially among the boys, the drop from third to fall fifth being significant at the .01 level. A longitudinal

TABLE 42

THIRD AND FOURTH GRADE MEAN SCORES MADE BY THE FIFTH GRADE

		Third Grade			Fourth Grade		
		$\bar{x}$	σ	R	$\bar{x}$	σ	R
1.	Motivation	80.67	26.11	21-110	99.40	24.10	58-140
2.	Teacher as Learning Facilitator	86.13	25.69	41-135	103.85	15.59	27-128
3.	Conventional Learning	101.50	20.72	59-140	96.75	15.23	73-127
4.	Complimentary Learning	106.92	21.83	69-151	92.90	18.46	64-125
5.	Learning Index	91.63	26.12	46-153	94.40	19.19	55-129
6.	Rigid vs Flexible	112.08	20.74	85-146	102.20	14.77	71-131
7.	Generally Accepting Soc. Clim.	93.21	22.46	53-138	95.80	17.26	53-123
8.	Acceptance Given	89.09	13.96	52-114	89.40	13.28	57-110
9.	Acceptance Received	83.96	15.65	48-115	94.86	13.00	72-117
10.	Social Climate Index	85.75	17.58	28-115	83.14	36.39	48-119
11.	School Anxiety	86.36	13.25	59-106	94.00	21.47	59-124
12.	Emotionally Supportive Classroomq	82.08	16.29	49-118	82.75	16.44	540 110
13.	Mental Health Index	74.33	18.75	12-102	83.65	23.05	42-121
14.	Self Norms	90.45	23.56	33-136	99.35	23.10	40-136
15.	Group Norms	84.77	20.48	48-116	99.90	22.33	61-144

trend upward seemed to characterize the Generally Accepting Social Climate, the increase of fourth over third being significant .05, that in spring fifth over third being significant .01. Spring of fifth grade found Acceptance Given significantly (.01) above that in third and fourth grade, both means were significantly (.01) below the level in spring fifth. The third grade mean was only 83.96, well below the normative average.

The Mental Health Index in third and fourth grades is significantly (.01) below both the fall and spring fifth grade means. The third grade mean of 74.33 is far below that of third graders from the normative group. School Anxiety diminished somewhat from third to fourth grade, as indicated by the increase in the mean but remained significantly (.01) greater than it was in fall fifth. School Anxiety in spring fifth was significantly (.01) less than in third grade and significantly (.05) less than in fourth grade. Third and Fourth grade perceived a significantly (.01) less Emotionally Supportive Classroom than did the fifth grade on both administrations of the SCR.

The Self Norms showed no significant longitudinal changes except an increasing homogeneity of variance in spring fifth compared with third and fourth grades. The third grade mean on the Group Norms was significantly below that in fourth (.05), in fall of fifth (.01) and in spring fifth (.05).

Self Concept and Need measures were available for the group for third, fourth, spring fifth grades, in addition to the SCR data. Since the period from fourth to spring fifth includes the period of the experiment, any changes are of interest. The Semantic Differential measure of self concept is designed to lessen defensive distortion. The increase in the girls' mean from 80.83 in third grade to 108.22 in fifth grade was significant (.01). The drop in the boys' mean was nonsignificant, as were the gradually increasing means of the combined group. The Self Esteem Inventory asks pupils to mark a series of statements as "like me" or "unlike me".

Total Self Esteem showed a significant (.05) decrease in variance from third and fourth to fifth grade spring. Total Self Esteem is composed to Personal Self Esteem (self adequacy). Self Esteem with respect to Social Relationships (self adequacy re peers) and Self Esteem with respect to School. On Personal Self Esteem, the boys' mean of 116.64 is significantly (.05) higher than the girls' mean of 104.00 in the spring of fifth grade. The variance is significantly less than that in third grade (.01) and fourth grade (.05). Social Self Esteem increased significantly (.01) from both third and fourth grade to fifth grade. School Self Esteem showed no significant changes. Table 43 and Figure 13 represent these data.

TABLE 43

Mean, Standard Deviation, Range of Self Concept, Needs Scores for Third, Fourth, and Fifth Grade

	Third			Fourth			Fifth		
	x		R	x		R	x		R
16. Semantic Differential	87.73	20.49	61-126	96.96	20.94	68-143	98.90	23.94	43-140
17. Personal Self Esteem	104.00	26.96	71-132	101.15	22.54	61-139	110.95	14.20	87-134
18. Social Self Esteem	83.18	24.74	58-124	92.80	17.55	62-126	113.50	18.98	84-138
19. School Self Esteem	101.55	19.89	72-126	98.40	20.52	50-126	103.70	19.00	50-126
20. Total Self Esteem	98.36	26.38	66-123	100.70	22.81	60-135	108.75	15.26	81-132
21. Nach	120.67	17.01	93-145	103.65	15.48	45-144	95.20	23.33	39-132
22. Naffil	103.11	11.21	84-125	98.15	12.30	72-137	102.75	16.88	82-137
23. N infl.	89.89	19.81	68-138	98.50	18.60	69-168	98.90	20.26	64-152

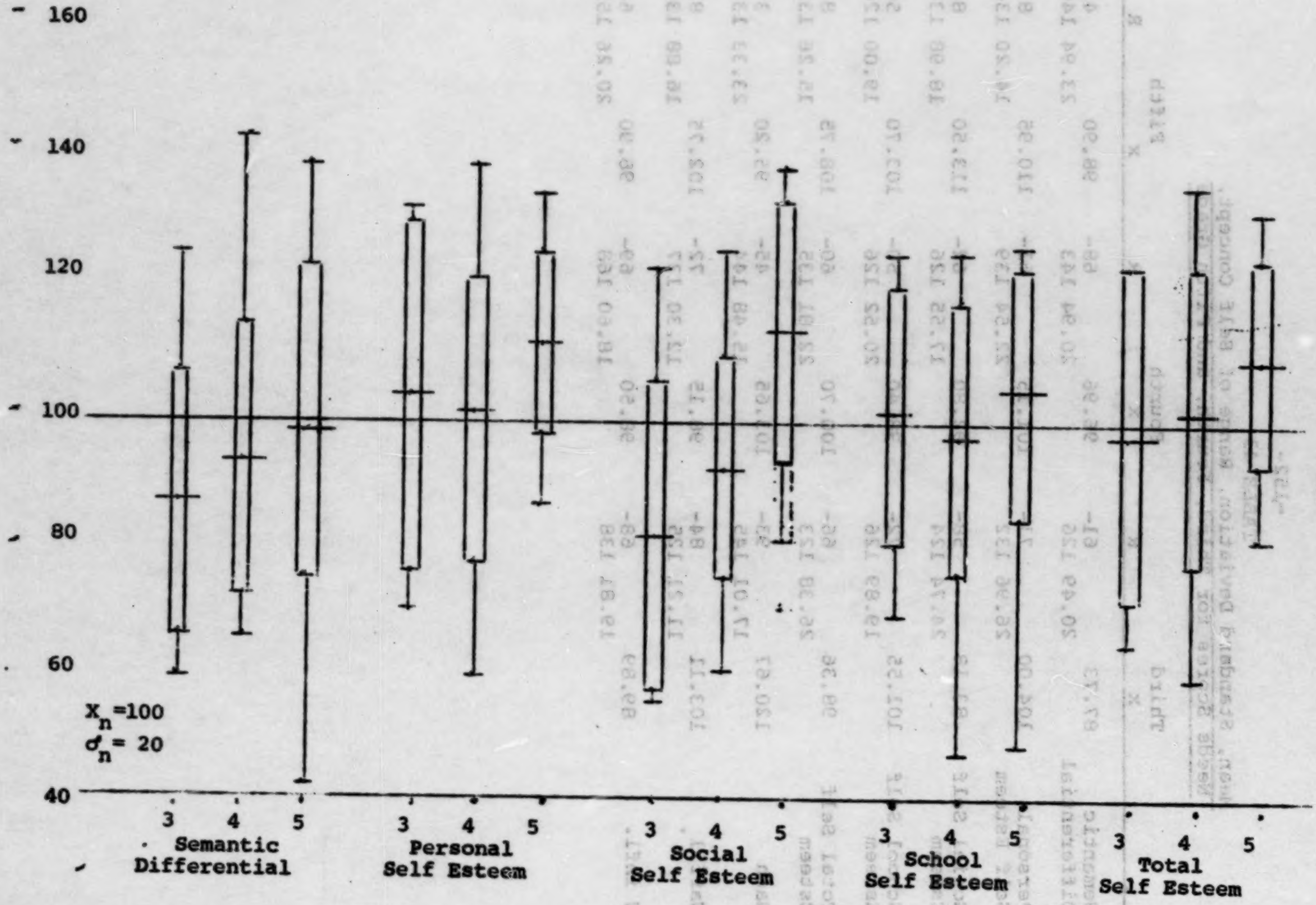

Figure 13. Longitudinal Trends of Self Concept Measures.

The My Opinions Card sortwweights a series of statements pertaining to N-achievement, affiliation and influence areas according to their importance to the pupil.

The interdependency of the Need measures due to the form of measurement makes a rank order comparison of the patterning of Need Achievement (Nach), Need Affiliation (Naffil) and Need Influence (Ninfl) more meaningful than direct comparison of dimensions across the third, fourth and fifth grades. The group in third grade was more strongly achievement oriented than the normative third grade group with Naffil and Ninfl following. The girls maintained the rank order of Nach, Naffil, and Ninfl in fourth grade while the boys gave Ninfl a slight advantage in a balanced distribution of needs across the three dimensions. In fifth grade the boys' ranking of Naffil, Ninfl and Nach dominated the girls' ranking of Nach, Ninfl and Naffil to determine the combined classroom ordering. The result of these repatternings made Nach drop significantly (.01) from third to fifth grade. The girls' Naffil dropped significantly (.05) from third to fourth and was significantly (.05) below the boys' in fifth grade. The girls' Ninfl decreased significantly in variance over the years. The fourth grade girls' mean Ninfl was significantly below the boys' mean and the difference was almost significant in fifth grade.

SUMMARY

In general, the changes found in the experimental year were in the direction and of the nature to be expected. One could be quite satisfied with the results of the planned intervention efforts except for one thing: The changes which took place over the non-experimental periods. This invites more detailed examination since it suggests that interventions unplanned may be more significant than those planned. Were there factors in the natural setting which have any logical relationship to these results?

The administrative decision to establish two combined third-fourth grades may have had an unforeseen impact on attitudes toward academic learning, social behavior and self-esteem. Group III-IV A, the less mature, was composed of 13 third graders (10 boys, 3 girls) and 11 fourth graders (4 boys, 7 girls). It contained all of the boys later cited as being difficult. Group III-IV B, the more mature, contained 11 third graders (5 boys, 6ggirls) and 11 fourth graders (7 boys, 4 girls). The latter group contained most of the boys and girls later cited as being more mature and academically oriented. In both groups the chronological age range would be broader than in most classrooms with a flatter distribution expected. One would also expect some cross grade competition group status and academic recognition.

Now it is important to note that the third graders who came to constitute the experimental class were thus in two different combination grades when the data were first collected. In both instances, our third graders would be the low men on the totem pole relatively speaking and deprived of their group structure from the previous two years. There is evidence that the third graders were oriented toward the fourth graders in their respective groups and their own age group suffered lower acceptance. When we look at the scores on the scales for the fractionated third grade they are depressed on all Indexes. At least all scores are below the mean.

This fractionated third grade were put back together in one fourth grade, and they resumed the membership that had been together in grades one and two. One anticipates some readjusting. The social climate was slightly down. The learning index slightly up and the mental health improved the most, but then it had been quite low. Also, during this period there was a teacher turn over which would hardly add to the development; in fact, the reputation of a difficult group became estabilished.

Now we come to their fifth grade experience. The first measures were after the summer and one month under a most concerned teacher. She went all out to help the group in all areas. At this point the measures show pronounced improvement in the learning area which was one visible teacher effort point. The mean of this index is now considerably above the mean. Social climate shows some improvement but it is still below the mean. It proves for many teachers a most difficult complex to alter. Mental Health goes up as the teacher introduces academic stability and purpose. It is now above the mean.

At this point attention became focused on the social climate as the one remaining low area. During the experimental year this was the object of the intense work previously described. As a consequence, in the spring assessment, there is a slight drop in the learning index and no real change in the Mental Health both of which remain above the mean. However, the social climate does show pronounced change and in the direction of the effort.

The classroom environment was seen to be significantly more flexible. Significantly more acceptance was given and received and although nonsignificant, changes in the accepting social climate were in the expected direction. The resultant was a significant increase in the positive perception on the Social Climate Index. Perceptions in the learning and in the mental health areas did not change significantly.

There are several lessons to be gained from this. One is, the consequence of administrative manipulation of groups to serve one goal may not, at the same time, satisfy others. There is a distinct need for base line material on classes before planned interventions that appreciation of consequences may be as broad in base as possible. Another matter is the fact that mean changes mask individual variance in adaptation as shown by the case studies. At all odds, one should be cautious in ascribing changes to given interventions without first thinking of the long term developmental trends.

The Group in Grade Six: A brief summary of the sixth grade teacher's perception of the group is based on an interview held in the spring just prior to the end of school. Preceding the teacher's contact with the group there were rumors that this was a difficult group with a pinpointing of the boys and particular children as targets. Rumors that he was a "tough man teacher" also circulated among the group and resulted in a delegation of boys who called on him before classes began. He indicated his firm expectancy that the group would get along all right.

When he met the group in the fall, he found them "sharp and sophisticated". They were unusually sensitive to adult reactions, skillful in challenging authority and in manipulating adults. He assumed a role emphasizing his leadership rather than his power to direct their activities. Firmness in the expectancy that they would behave like adults and treating them in like manner helped him to establish a subtle control without making rules that the group regarded as needed only for children and as a challenge to their own autonomy. Group pressures helped keep behavior in line with expectations and both the teacher and the administrative representative felt there had been fewer "incidents" during the year.

The group members were drawn into planning sessions with teacher imposed limits underlying the choices available. Those who tended to challenge authority were put in positions of responsibility for planning and evaluation along with the teacher. The split between the boys and girls in classroom activities continued with the noninteraction more noticeable than the hostility. The girls continued to be more work-oriented and were highly competitive in a subtle manner. The boys remained difficult to motivate, but would eventually follow the girls' lead. As noted the previous year, the group is composed of children who are socially immature or who are quite sophisticated with few in the middle range making the contrasts between individuals more apparent. In his independent description of individual children, it was apparent that the personality dynamics noted the previous year presisted, but continuing slow progress ensued. The teacher said he had enjoyed the group and the individual children, including those cited as being particularly difficult by other faculty members. He felt one of his major problems was trying to dispel the group image among the faculty that the sixth grade boys were behind most of the school "incidents". He found the girls in the class rose to the boys" defense in several cases of mistaken identity. Perhaps intervention on a school wide basis in addition to working within a group itself is needed to prevent a "difficult" group from becoming stereotyped within a given school setting.

CHAPTER VII

SUMMARY OF SCHOOL CLASSROOM BEHAVIOR DATA

Thus far, we have discussed the development and standardization of the various instruments for use in the classroom analysis. A case study of one class has been presented with the especial attention to possible results of various planned interventions. Two questions remain. One is the interrelationship found for the various factors and dimensions. The second is the nature of the developmental picture for the individual classes which were studied over the three years period. This also implies comparison of various classes at the same grade level in the instances where there are overlapping classes.

INTERCORRELATION ANALYSIS

The factors used in the School Classroom Research were derived from the large bank of questions which were originally grouped into dimensions on an apriori basis. The dimensions actually used however were derived from the factoring as described: All factors and sub-factors or specific dimensions were intercorrelated. In effect there were three double replications of the correlations. Each of the dimensions was run against all others for each of the three years. In addition, both constant 'N's' and variable "n's" were run each year because of the populations changes. Thus we have one group with the same children over three years, and another with certain changes by additional or lost members for one or two of the three years. Of course, the constant "N's" are incorporated in the variable "N" figures.

A detailed study of all the intercorrelation of the classroom dimensions, many other attributes and the aggression data is in process for a subsequent publication. Only a few examples of the classroom data will be scanned here. The various tables for the three years are not identical, though they are generally similar. Constant and variable N results were also quite alike overall.

The individual sub-factors comprising the learning index, with the exception of conventional learning processes, were generally intercorrelated at the 1% level of significance, the r's ranging from .24 to .80. There were no similar high intercorrelations of the learning dimensions with any other index or individual factors. This is of course to be expected when one considers the scores are scores on independent factors. The elements of the social climate index were somewhat interrelated but at a lower level than the learning. School anxiety and emotionally supportive classroom were both significantly related to the mental health index, but were related only twice

TABLE 44

Intercorrelations of School Classroom Variables

Variable N - 1963

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Motivation	1		48		36	73	24	37	17		20	17	46	47	28	25
Teacher/Learning Facilitator	2				19	65		35	16		19		46	26	17	22
Conventional Learning Process	3					31		18				31	-15	-31		14
Complementary Learning Process	4					67	33	26	26		28		18	22	32	35
LEARNING INDEX	5						47	42	24		30		40	31	26	42
Rigid vs Flexible	6							23			23					23
Generally Accepting Social Climate	7								23	29	57		38	27	22	31
Acceptance Given	8									36	76		18	23		24
Acceptance Received	9										66		23	21		18
Social Climate Index	10												32	30	14	32
School Anxiety	11													68		
Emotionally Supportive Classroom	12													76	15	18
MENTAL HEALTH INDEX	13															
Self Norms	14															
Group Norms	15															30

KEY: Decimal Point omitted, Underscored = 1%, Not Underscored = 5%

(of the six sets of replications) to each other--once at the +1% level and once at -5% level. The individual and group norms usually correlated in the high .20's, significant at the 1% level.

In most replications the motivation, teacher as learning facilitator, complementary learning processes and learning index were all positively correlated with other dimensions except for acceptance received. The accepting social climate, acceptance given (and the climate index), emotionally supportive classroom (and the mental health index) were also found to have pervasive though generally low order (.20's and .30's) interrelationships. Group norms were more frequently related to other factors than were self norms. The absence of anxiety about school was not positively related to much else; sometimes relationships were negative.

Since all of these are from pupil perception data, and all deal with classroom phenomenon, one would expect possible contamination resulting in generally positive intercorrelations but at a low level and thus not explaining much of the variance. The lack of outstanding core controllers and a close similarity of the six correlation replications is perhaps surprising.

The next major block of scores comprise the self esteem group. The Semantic Differential and Total Self Esteem on the Coopersmith are always inter-correlated at the 1% level, ranging for +.41 to +.60. The Semantic correlations with the parts of the Coopersmith are lower except for school self esteem. This is understandable since school self esteem and total self esteem are similar, the correlations between them being + .93 to +.95.

Personal and social self esteem are significantly related (+ .18) only once of the six replications, but school self esteem is always significantly related to both (+ .43 to + .61) Both total measures of self esteem (Semantic and Coopersmith) were positively related to many other factors but of a low order (+.16 to +.41). Motivation, a positive view of the teacher, social acceptance, an accepting climate and positive mental health factors were included in these low positive correlations. There was no real pattern of significant correlations with school and social self esteem but personal self esteem was related to social climate and social acceptance. This suggests that self esteem as measured here is not founded on or related overall to set specifics. In a general way, well being is reflected in other encouraging phenomenon of course, but particular pupils apparently build their self esteem from different nurtures and sustain it in different ways. Individual patterns and sub-groups of "types" will need to be studied by computor searches to make anything more than conjecture from this. At any rate self esteem is not sustained on a single source basis. The next set of dimensions, the need patterns, are of course negatively related to each other due to the method of

TABLE 45

Intercorrelations of Self-Concept and Needs with All Other Dimensions

Variable N - 1963

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Semantic Differential	28				14		19	17		18	22		26	18									
Total Self Esteem	29				17		17	16	16	19	30	28	43			54							
Personal Self Esteem							16	17	30	22		20	14			15	23						
Social Self Esteem						20	16		18	17		21	14	14		14	35						
School Self Esteem	23		-15				19	18	26	23	26	34	43			52	93	45	53				
Need-achievement	28				14		18						15	15									
Need-Affiliation	-19								14										14	[illegible]	-35		
Need-Influence	-15						23					20	-14						-17	[illegible]	-52	-39	

Other Dimensions

1. Motivation
2. Teacher/Learning Facilitator
3. Conventional Learning Process
4. Complementary Learning Process
5. Learning Index
6. Rigid vs Flexible
7. Generally Accepting Social Climate
8. Acceptance Given
9. Acceptance Received
10. Social Climate Index
11. School Anxiety
12. Emotionally Supportive Classroom
13. Mental Health Index
14. Self Norms
15. Group Norms

Key: Decimal Point omitted, Underscored = 1%, Not Underscored = 5%

scoring. But the surprising thing is the almost complete lack of any relationships of needs with self concept. There were three significant negative relationships between N-influence and social self esteem which implies that high need to influence is found in company with low social self esteem. One could conjecture that those who have low social acceptance need to influence others at a more intense level in order to give themselves a sense of power, or that those who have high needs of this nature perceive themselves with less complete success,though actually their relative success may be higher than most. The relationship of social acceptance to both of these is intermittent and includes negative correlations. Need achievement is consistently related to motivation while affiliation and influence, with one single exception are either not or are negatively related. Need achievement is also almost without exception related to the learning index. N-achievement is also quite generally related to the mental health index and self norms (which imply compliance to the classroom expectations) but these correlations are of a low order. N-affiliation is generally related to social climate and social acceptance patterns as might be anticipated. Though there are only a scattering of any significant correlations with N-influence, more are negative than positive and these with learning and mental health.

In surveying these correlations, it becomes most evident that there is no place for the expectation of simple relationships between personal psychological factors and classroom conditions. A given classroom condition affects different pupils with the same characteristic (high need-achievement pupils for example) in different ways. Hence, there is a need for search programs to locate symptom packages which comprise psychological sense. For example, a high need-achievement pupil in a low learning enviornment may be anxious, while a high need-achievement pupil in a high learning environmant might not be since this complex suits him. The more detailed special study of variables in this fashion will follow in the subsequent research mentioned above. It also appears that there would be advantages in factoring the combination of all of the separate measures. This too will be done in the subsequent study. Finally, it should be noted that the correlation patterns for various ages may be dissimilar. Certainly, one would generally expect more independence with maturing, but there may be certain aspects which would reverse at adolescence. The genetic picture deserves thorough analysis which cannot be accomplished in the total group summation reported here.

AN ANALYSIS OF CLASSROOM PROGRESS FOLLOWED OVER TIME: THE MATTER OF CONSISTENCY AND CHANGE[1]

It will be remembered from Chapter III that 19 dimensions resulted from the factoring of all items. (See Appendix Page ?)

It remains now to follow the individual classes over time with a view to ascertaining change, stability, variance and the like. The story of one class has already been presented in considerable detail in the previous chapter. Now the goal is to follow each class, compare it year after year with itself and any same level classes available in the total sample. Since all of the scores have been standardized, it is possible to compare one class with another without distortion due to age level differences. But a further complication exists, one well known to those doing sequential research in natural classroom settings. This is the matter of population change. There is no reasonable way to adequately justify data with changing membership. It is impossible to tell the status of new pupils before they were added to the group in the first place, or the effect on the total group when various members are introduced or leave in subsequent years. At any rate, all T and F comparisons of the class groups were run with constant and variable N's throughout to explore the possible consequence of this condition.

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[1] The actual scores for all grades and both constant and variable N's is most extensive. A simplified table is available in the Appendix.

The point at issue concerning the cross class comparisons at the same grade level is a simple one. If there were no differences between different classes or no pattern lending some consistency to differences as might be found, one would hesitate to attach much meaning to differences in the same group over the years.

In Table 46, it will be noted that the only differences

TABLE 46

THE COMPARISON OF VARIOUS CLASSES AT THE SAME GRADE LEVEL - SIGNIFICANT DIFFERENCES REPORTED ONLY - t's

Dimension		III	IV	V_1	V_2	V_3	VI	VII	VIII	IX_1	IX_2	IX_3	X
Motivation	1	**		**	**			**	**				*
Teacher	2	*		*					**		(*)	(*)	*
Convent. L.	3				*	**					*	*	
Complem. L.	4	**		**	**		*	**	*	**	**	*	
LEARN. I.	5						*						*
Rig-Flex.	6		**		**			**		**			(*)
Accept.Soc.Cl.	7		*	*f									
Accept. Giv.	8			**	**		**			(*)			*
Accept. Rec.	9			(*)	**		**			(*)			
CLIM. IND.	10		*	**	**f		**			*		(*)	*
School Anx.	11			**		**				**	(*)	*	*
Emot. Supp.	12			**	*			*	**	**	*		
MENT. H.	13				*				*	**	**	*	*
Self. Norm	14						*	*	**	**	**		*
Grp. Norms	15			**		(*)			**				
Sem. Diff.	16			*	**			*	**	(**)			
TOT.Self Est.	17		*	*	*f					**		**	
Personal S.E.	18		*	*	*f					**		**	
Social S.E.	19						(**)	*					
School S.E.	20		*	*	**		(*)			**	*	(**)	
Need Achiev.	21		*							**	**		
Need Affil.	22									**	**		
Need Inf.	23								**	**	**		
		N's= V-24 V-19	C-19 V-24 C-13 V-20	C-21-19-13 V-25-24-20			C-21 -19 V-26 -24	C-42 -42 V-48 -51	C-36-42 V-48-51	C-41-35-42 V-54-55-57			C-42-36 V-52-58

Note (a) Constant N data reported, using ( ).

(b) ** 1%
* 5%

(c) There were 3 grades at level V and IX. V_1=(62 vs 63); V_2= (62 vs 64) V_3= (63 vs 64); f denotes significant f as well as t

(d) N's
C= Constant
V= Variable

between the two III grade classes were found in the learning area. For the two Grade IV's, classroom differences were in the social climate area with differences in the self concept and achievement domains as well. Three Grade V classes were compared. Since the 1963 fifth grade class lies in between the others, but closer to the 1964 group, few differences are seen here. But the 1962 group differs from both on many counts. Most of the Grade VI differences are in the social areas of acceptance patterns, but others do occur in almost any dimension. The VII classes have few scattered differences, while the VIII classes differ both in learning, emotional support and mental health, norms and the semantic self concept. The three Grade IX classes show differences in almost every area even including the need structures. The two X grade classes show scattered differences and none above the 5% level even then.

We may thus conclude, on these measures the classes can be found which are different. The grade levels cannot account for the variance since scores were first standardized. One could say that each class demonstrates the same unique style of a multitrait idiosyncratic profile which one finds in individual personalities. Endless variation is possible.

The fact that there are differences is taken to mean just that: there are differences in the nature of classes on these dimensions. That these differences are valid indications of the stated condition does not of course necessarily follow. But the fact that there are differences at all is what makes it worth while to work on the validity of such differences from group to group. The fundamental interest of this study, however, it to follow the same class year after year. What is the picture when we follow these classes over a period of time. Will there be variation on these measures of classroom relevant dimensions?

Grade III[1] can be followed in Table 47 . It is seen that Grade III did not maintain a stable classroom over the three years. The variable N sample was double the constant N, an unusual situation due as a consequence of an effort to regroup two grades which took place during a part of this study. This was described in detail in the last chapter.

It is interesting to note that this class was quite low in overall average classroom measures, being in the 70's on motivation and mental health. The only high index was flexibility. Of the self concept measures, the semantic was low (72) as was the social self esteem (82). From this state, the group moved in three years to a point where all three major indexes were 108 or better.

The need achievement of the constant N group dropped from 115 to 98 paralleling,as it happens, what was taking place with the shifting total classroom population. Compared

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[1] The various groups are classified by their grade level at the time of the initial testing.

TABLE 47

Longitudinal Comparisons by Grade

		III	IV	III	IV	V	IV	V	VI	V	VII	VIII	VII	VIII	IX	VIII	IX	X	IX
		IV	V	V	V	VI	VI	VI	VII	VII	VIII	IX	IX	IX	X	X	X	XI	XI
Motivation	1	**↑	*f↑	**f↑	**↑		**↑	**↑	*↑	**↑		**↓					(*↑)	**↓	
Teacher	2	**f↑	**f↑	*↑	**↑		**↑		*↑	**↑		**↓	**↓	**↓	**↑	**↑	**↑	**↓	
Convent. L.	3				**f↑			(*↓)			*↓		**↓	**f↓	**↑	(**↓)	**f↑	*↓	(*↑)
Complem. L.	4							**↓		*↓	**↓	**↓	**↓	**↓		**↓	**↓		**↓
LEARN. I.	5	*↑	**f↑	**f↑	*↑	*↑	**↑			*↑	**↓	**↓	**↓	**		**			
Rig-Flex.	6								**f↓	**↓		*↓	*↓	**↓		**↓		**↓	**f↓
Accept. Soc. Cl.	7		**↑	*↑	*↑								*↓	**↓	**↑		(*↑)		*↑
Accept. Giv.	8		**↑	**↑	(**↑)		*f↑												*↓
Accept. Rec.	9	(*↑)	*↑	**↑										(*↑)					*↓
CLIM. IND.	10		**↑	**f↑			*↑												
School Anx.	11		*↑	**↑					*↓	**↓	**↑		**↑					**↑	*↑
Emot. Supp.	12		**↑	**↑	**↑		**↑				*↑	*↓		**↑	**↑		**↑		**↑
MENT. H.	13		**↑	**↑	**f↑		*↓				(**↑)		*↑	**↑	**↑		**↑	*↑	**↑
Self. Norm	14			*↑		(*↑)					*↑	(*↓)	**↑	**↑	**↑		**↑		**↑
Grp. Norms	15	*↑		**↑	**f↑		*↑				**↑	**↓							
Sem. Diff.	16							*↑			(*↓)		*↓	*↓		*↓		*↓	
TOT. Self Est.	17				(*↓)		*↑		(*↓)					(*f↑)	*↓			(*↓)	
Personal S.E	18	(*f↑)			(*↓)	(*↓)	*↑		*↓					(*f↑)	(**↓)			(*↓)	
Social S.E.	19			*↑			*↑							(*↑)	*↓				
School S.E.	20				(*↓)		(**↓)	*↑	*↓			*↓	*↓		*↓	(*↓)	**↓		*↓
Need Achiev.	21	(*↓)		(**↓)															
Need Affil.	22																		
Need Inf.	23													*↓	*↓				
		Constant N=13 Variable N=24			Constant N=19 Variable N-24			Constant N-21 Variable N-25			C=42 V 51-51-57			C=36 V=48-56-58			C=42 V=54-52-61		

with the norms then, this class started out in an unfavorable position. It did change in many dimensions in a positive direction. A teacher working with this group initially shouldhhave found tham reluctant learners and relatively unmotivated.Other conditions in the classroom climate were also not favorable, and the self esteem was mixed. After three years, they no longer persisted in these characteristics and for all intents and purposes, responded more favorably than average children on all save one basic need structure. The question is, are such conditions and changes typical of these classes? We know there were many mitigating circumstances in this instance as we saw in the previous chapter.

Grade IV On the classroom measures, with the exception of the mental health index, Grade IV began as a typical group for the age. Most dimensions were within five points of average. However, in the self areas the scores were almost all 110 to 126. They had good opinions of themselves and more surface self esteem than most youngsters. This class improved on all but two classroom dimensions. The increases in anxiety and rigidity were not significant. Interestingly enough, all of their self esteem measures, three years later, are just about average. It would be worth knowing whether or not something of a defensive nature lies behind these changes, since one never knows what stated self concept means without a verifying analysis, and the semantic differential was only 94 to start with. The teacher should have found this group a typical one with perhaps two differences at the close. The teacher's role is seen as a facilitator at the very high level of 133: in other matters the class shows positive characteristics except for the anxiety level. There may be a reflection of considerable teacher dependence in this pattern.

Grade V: Grade V began somewhat low on motivation, the social acceptance given and the emotionally supportive nature of the classroom. Several self concept measures were also lower than average. In general, the teacher's place as a stimulant for learning increased and with it the motivation. The result is a class characterized by high involvement in learning. The social climate maintains in the low 90's. With the increased learning emphasis, school anxiety goes up markedly, though for exactly what reason is of course not known. If the semantic catches a deeper level of a self concept, it would appear that there is considerable underlying inadequacy, a bit of which is reflected in the Coopersmith personal and school dimensions as well. The need structure scores tend to remain stable.

Grade VII: Grade VII began as eager seventh graders with a very high involvement in learning. By the time they have become ninth graders, this enthusiasm has modulated and they are below the norms for their age. The social atmosthere has ended slightly under normal, though with no significant change. Again, a pattern noticed before, high anxiety and high learning involvement characterized the group in the first year of junior high. The classroom was seen as more hygenic, supporting and less productive of anxiety. At the same time the learning investment decreased. As a group, they are more positive concerning their personal and social self esteem than school self esteem which ends up low. Incidentally, as will be reported later, this group's measures including academic progress took a considerable spurt the last of the three years.

The assumption here would be that this group moved away from the academic sphere and made some improvement in mental health aspects. However, the school self regard issue was not solved, and actually deteriorated along with this change. It would be difficult to find a group more typical and stable in need structures than this class over the three years.

Grade VIII: Grade VIII started as a somewhat above average group in learning and social climate but low in mental health and norms. Except for school self esteem, this was apparently not accompanied by low self esteem. In fact, the self concept aspects tend to maintain at reasonable levels except for school. Now the second year is interesting. Here the learning, flexibility and social climate suffer. At the same time peer acceptance increases slightly, there is less anxiety, and more emotional support in the classroom. Their own values as seen in the norms tend to compensate and self esteem builds up. One could speculate that the peer culture is a major source of their gratification rather than academic success. It is as if they banded together to ward off outside infringement. Also, achievement as seen in their educational age increases less than six months during this year: it will about double in increase the year following. Obviously the academic aspects are out of kilter in some fashion or another and it looks as if the second year was a most unsatisfactory one. The one impressive change is the role of the teacher in the third year. There has been no about face regarding learning but the class has come to view the teccher as a very positive influence. One wishes information regarding what actually transpired with these changes: perhaps in Grade IX there is a response to particularly effective teachers.

Grade IX Grade IX began somewhat low in overall learning and with a rigid atmosphere. The overall social climate began low and remained set, and emotional support was at 84, with a total mental health index of 81 again. With the exception of school self esteem, this self area was quite adequate and the need structures maintained almost exactly on the mean.

Again, the striking change is in the role seen for teachers when these students were in Grade X. This is the same point at which the previous set demonstrated a pronounced positive relationship with what are for this group the same set of teachers. The following year this again dips to average, so there would appear to be some factor in that teacher group which encourages the high responses seen in both classes. It will be noticed that the overall learning index does not change appreciably, since the increase in the teacher factor is overweighted by the lack of change in other dimensions. The social climate index doesn't change though there is a drop in acceptance given. Anxiety decreases and the class becomes more emotionally supporting, with increases in mental health. Self norms become more conventional.

The stress of self esteem shows up somewhat in the semantic differential, but is most severe in school self esteem which drops from a starting low point of 72 to 56 and 58. Since this has also happened in several other classes and since it happens in spite of age corrections on the raw scores, it would appear that the competitive academic nature recognized as the nature of this school makes a definite impact. Somehow school anxiety is managed by the way the teachers handle assignments and the way the pupils are taught to study and recite. They are not upset by the tasks. It would appear deeper than this. It is an overall feeling of not doing as well as they are expected regardless of their relative objective successes.

Conclusion: We have been interested in discovering if various classes differ on the dimensions used in this study. We do not find overwhelming variations. Comprised of many individual responses and with individual variation, this is to be expected. However, classes did vary significantly in certain characteristics.

Next we followed six classes, each over a period of three years. Here again some showed many changes and others few. The presumed impact of overriding teacher role had been noted in particular group changes. School self concept seems the most vulnerable as might be expected in a school study. Compensations in one area seem to be called forth when things deteriorate in another area. Classrooms operate as organized units rather than as simple additive assemblages.

It would appear that interventions can be induced to produce planned change. More than that, it is evident that unanticipated factors cause variation from year to year in the responses of the same class. The unintended may in fact wash out the effects of efforts for certain planned changes. It remains now to study concomitants of such changes.

CONCLUSION

It is felt that these measures are useful for designing and studying the particular profile of a class.

Classes do differ from one another and classes do change, each to its own pattern on the twenty-three dimensions. However, little variation over time is seen on the need structure components. In fact, only one of all the constant N changes is even at the 5% level. This suggests the relative stability for the need measures exactly as was anticipated from the theoretical nature ascribed to basic needs. They should be stable conditions not easily altered over time. Such is the case. On the other hand it will be noted that several classes even in this one relatively homogeneous school did show between class differences in need structures, taken together with the same class stability; this is quite encouraging in regard to these measures.

The overall conclusion is that these factored dimensions can be used to describe the many aspects of classrooms as well as to anticipate the design of possible intervention techniques. "School as a whole" also may have identifying general characteristics. These instruments may be one way to study such overall school climates. Ascertaining external evidence for the many dimensions is certainly now worth the effort it will demand.

The present analysis looked only at most global measures which is not enough to really understand a classroom.. There are more data to be considered even at this level, and the analyses now underway will include the relationship of classroom and self data to achievement, organismic age agression and creativity, still however broad band analysis.

Fortunately, we are finally past the assumption that a classroom any more than a person can be understood in simple undimensional terms. The organic nature of the class as a whole suggests many facets to the relationship of needs,classroom experience in learning, peers and authority. All are intertwined in evolution of the self concept. The goal of this research is not to find some simple measure but to measure important aspects of classroom behavior in order to analyze their workings with more astuteness. To measure ability and achievement is not enough.

There are two steps which suggest themselves at once. The first is the study of variance patterns as well as averages. This may show something very critical about between group differences. A hetrogeneous spread on motivation would differ from a tight homogeneous one with the same mean when it came to needed teacher planning. Following this analysis of variation there is the matter of search patterns and sub-groupings. Does the pupil with low self regard also become the low motivated one? Are they split, some rejecting and some eager to learn? Overall correlations mask important sub-groups where interrelationships can be seen in their dynamic unity. This requires a new statistical analyses.

In short, the quest must now move from how many ways can we find to steretype classes and groups to how many ways can we indivituate and comprehend each class as it functions with unique constellations of characteristics. Also, one need not use all these dimensions in studying a class. Various ones, or groups of dimensions can be selected for particular purposes. In fact, a current sequence in this research employs many of these measures to study the impact of racial integration in a public school system. What happens to the classrooms? And what happens to individuals? These are certainly questions deserving attention and the tools worked up in this research can be applied to this task.

CHAPTER VIII

INTERRELATIONSHIP OF CHILDREN'S SOCIAL AND PSYCOLOGICAL DEVELOPMENT AND ACADEMIC ACHIEVEMENT

In any classroom group two types of achievement are readily observable, namely academic and personal-social. The discussion in previous chapters is concerned with the latter. The purpose there is to describe groups of children in a classroom who are attempting to relate to their peers and teacher, to satisfy emotional needs and to acquire a feeling of inner adequacy and stability while facing an ever changing setting composed of people, things, tasks, expectations and the like. The dimensions identified for purposes of data collection are the learning climate, social structure, social climate and mental health provisions of the classroom as perceived by pupils, teachers and/or observers and pupils' self concept and needs.

ACADEMIC ACHIEVEMENT

Data on the academic achievement of University School pupils are collected as part of an on going longitudinal development research program. The California Achievement Tests are administered anually to pupils in grades one through twelve. Raw scores for reading, mechanics of English, spelling and mathematics are converted to age units in months. The achievement ages are then averaged to provide an educational age which is used as the index of total academic

achievement. Age norms are used in preference to grade norms since chronological age increases at the same constant rate for all children while grade status due to variations in promotion practices, does not.

Throughout the history of elementary and secondary education in the United States academic achievement has been the dominant purpose of the schools. Much effort has gone into raising both local and nationwide levels. Frequently this effort has been labeled "raising-standards" bacause the idea has an appealing and hopeful ring for many adults. According to Tables 48 and 49 the level of achievement for pupils in the University school is impressive since satisfactory achievement is indicated when the average educational age (Ed.A) for a class group equals the average chronological age (CA). Among the 18 grade groups studied only grade 4 for 1963 has the same educational and chronological ages. For the remaining 17 groups educational age is well above chronological age. In addition all groups, with the exception of grade 9 for 1962, show statistically significant progress over the two year period. Uninformed persons are prone to consider this a biased sample. This is incorrect because approximately 50% of school populations in the United States show a similar upward displacement of average achievement from expectation based on age norms. At the same

TABLE 48

LONGITUDINAL COMPARISON OF GRADE GROUPS FOR CHRONOLOGICAL AGE (CA) AND ACADEMIC ACHIEVEMENT (ED.A) IN MONTHS, 1962-1964

Year and Variable	Grade											
	3(N=12)		4(N=19)		5(N=21)		7(N=41)		8(N=36)		9(N=42)	
	Mean	S.D	Mean	S.D.	Mean	S.D.	Mean	S.D	Mean	S.D	Mean	S.D
1962 CA	105	3.2	114	4.3	128	4.8	154	4.9	164	5.3	176	4.5
Ed.A	109	10.5	131	15.3	138	20.1	160	21.6	182	21.7	195	23.2
	(4)*		(5)		(6)		(8)		(9)		(10)	
1963 CA	117	3.1	127	4.3	140	4.8	166	4.8	176	5.6	188	4.5
Ed.A	117	14.8	137	16.9	150	14.9	170	16.6	188	17.3	205	24.0
	(5)		(6)		(7)		(9)		(10)		(11)	
1964 CA	129	3.1	139	4.3	152	4.8	177	4.8	188	5.5	200	4.5
Ed.A	134	24.8	155	19.4	157	14.9	188	21.1	196	17.1	204	27.3
Difference in Ed.A '62 vs '64	p=.01		p=.01		p=.01		p=.01		p=.01		p=.01	

* Subsequent grade placements for each 1962 group are provided here. For example, grade 3 for 1962 became grade 4 in 1963 and grade 5 in 1964.

TABLE 49

CROSS GRADE COMPARISONS FOR CHRONOLOGICAL AGE (CA) AND ACADEMIC ACHIEVEMENT (ED.A) IN MONTHS, 1962-64

Year and Variable	Grade													
	4		5		6		7		8		9		10	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
1962 CA	114	4.3	128	4.8			154	4.9	164	5.3	176	4.5		
Ed.A	131	15.3	138	20.1			160	21.6	182	21.7	195	23.2		
1963 CA	117	3.1	127	4.3	140	4.8			166	4.8	176	5.6	188	4.5
Ed.A	117	14.8	137	16.9	150	14.9			170	16.6	188	17.6	205	24.0
Significance	p=.05								p=.01		p=.05 (62 vs 63)			
1964 CA			129	3.1	139	4.3	152	4.8			177	4.8	188	5.5
Ed.A			134	24.8	155	19.4	157	14.9			188	21.1	196	11.1
Significance							p=.05						p=.05	

time grade groups, almost without exception, show a comparable and statistically significant amount of progress over a minimum period of two years.

A picture of average group achievement above expectation based on published norms is frequently accepted as a desirable and hopeful condition. This positive reaction is, however, frequently nullified by data on achievement variability. For example, although the mean educational age for grade 3 in 1962 is 109 months which is 4 months above the mean chronological age, the standard deviation is 10.5 months. This means that, provided the distribution is normal, the middle two-thirds of the group are distributed between a low of 98.5 months and a high of 119.5 months of educational age. The total range in educational age is even greater. A still more disturbing or even distressing factor is the increase in variability as the group passes from grade 3 to grade 5. At grade 5 the standard deviation for educational age increases to 24.8 months, while the mean rises to 134 months. One standard deviation below the mean is now equal to 109.2 months as compared with 98.5 months two years earlier in grade 3. However one standard deviation above the mean is now equal to 158.8 months. Thus as the class progresses to a higher grade placement and mean academic achievement some pupils progress very slowly and consequently drop farther below the middle while others progress very rapidly and consequently increase their level of superiority. The data in Tables 48 and 49 show that the trend toward an increase in variability with time and school advancement holds for most of these classroom groups in the University School.

There is yet another way of viewing the variability in academic achievement which characterizes the classroom groups included in this study. Table 49 shows the v variability between classroom groups with the same grade designation but for different years. Available for comparison are 2 fourth, 3 fifth, 2 sixth, 2 seventh, 2 eighth, 3 ninth and 2 tenth grade groups. Both the mean and variability for educational age vary widely. For example, the means for the fourth grades of 1962 and 1963 are 131 and 117 months, a difference of 14 months. However, the standard deviations of the two groups are almost identical, 15.3 and 14.8 months. The means of the 3 fifth grade groups are very similar while the standard deviations differ markedly. At the same time the mean and variability for chronological ages remains constant for each grade level. It appears that the mean academic achievement of different groups at the same grade level in the University school varies randomly. It may either rise, fall, or remain constant. Variability at the same time may either increase, decrease or remain the same independent of changes in the grade mean.

The history of educational psychology is replete with efforts first to describe, then to understand and finally to reduce the wide variability in school achievement which is a dominant characteristic of most classroom groups. Psychometrics provide methods for collecting data which are essential to the use of modern statistical methods. The search for causes of academic variability has attracted much attention and usually proceeds in two different and frequently conflicting, directions. One directions is toward the psychological characteristics of students, the other toward the school and clssroom environment. During the early part of the present century much effort was invested in gathering evidence to show that most of the variability in academic achievement can be traced to differences in school organization and/or teaching methods. In general the findings continue to be negative but the effort persists. Witness for example the non-graded school, ability grouping, the ita method of teaching reading, a revival of interest in the Montessori method and many others. All represent efforts to reduce or eliminate achievement variability, to help all children to learn earlier and more rapidly what the schools teach. As a consequence every child could be guaranteed the benefits of equal academic achievement along with his right of equal opportunity for an education.

As a result of recent progress in the field of child psychology many researchers are attempting to establish a strong causal relationship between emotional and social variables and academic achievement. Concurrently findings from the fields of social psychology and group dynamics place increasing emphasis, not only on the importance of a relationship between emotional and social development and learning but also on the possibility that much delayed and slow learning is caused by pupils' emotional and social problems. The assumption is strengthened by clinical evidence which shows that many neurotic or psychotic children have severe school adjustment and learning problems. Consequently the possibility arises that any troublesome school behavior could be caused by social and/or emotional problems which are merely less severe than those requiring clinical treatment.

Although the data presented in earlier chapters of this report are not derived from clinical assessments, the dimensions studied are the same as those used frequently in such assessments. For example anxiety, the self concept, felt needs and the conscious awareness of the relation of the self to reality are important variables in many clinical examinations. The differences for purposes of this study are largely those of group vs. individual and depth. The broad dimension under investigation is the impact of children's emotional and social development on academic achievement. The hypothesis being tested is that the two have a significant causal relationship in the developing child. Consequently the amount of academic achievement should vary with children's success in achieving a healthy personal-social adjustment in the classroom.

During the past 35 years the University School research program has sought to demonstrate that the study of children and adolescents provides both a sound theoretical basis and a useful understanding of the variability in academic achievement encountered in the schools. The theory assumes that a dynamic interrelationship exists between growth, maturation and learning in the developing child. Support for the theory is drawn from (a) data from experimental embryology, (b) the concept of readiness included in most learning theories and (c) the theory of learning ability which places heavy emphasis on the importance of general ability or the "G" factor. The assumption of a significant correlation of size and maturation at birth is basic to the theory and widely accepted. An outstanding example is the use of measures of weight and body length as primary indices of prematurity. Although more subtle maturity indicators are needed as development proceeds, the relationship between body size and maturation continues into the adult period. In turn maturation becomes the most valid and reliable predictor of readiness for learning. During middle childhood a positive and significant relationship between mental maturity and academic achievement emerges and rapidly becomes the dominant school related developmental factor.

Data to support the above theory are derived from measurments of height in inches, weight in pounds, and grip strength in kilograms as indices of growth; carpal X-ray, number of permanent teeth and intelligence as indices of maturation; and reading, language and number skills as indices of learning. As previously mentioned the raw data are converted to age units in months. Growth (height, weight, and grip strength), maturation (carpal, dental, and mental) and learning (reading skill) ages are averaged at a given chronological age to form an index of total development labeled "organismic age".[1] The "organismic age" measure is related to to our developmental theory by virtue of its including growth (structure), maturation (functional capacity), and learning (skill) variables. It also provides the basis for testing the hypothesis that since children are irrevocably different in their growth and maturation their learning as indicated by academic achievement will exhibit a related level and variability. For a more detailed discussion of the theory advanced above the reader is referred to Gesell[1], Olson[2], and Krogman[3].

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[1] Olson, Willard C. and Highes, Byron O. "The Concept of Organismic Age", Journal of Educational Research, March 1942.

Three assumedly discrete and self-contained theoretical approaches to the problem of group differences in academic achievement are provided above. The assumption that only one of the approaches is valid places the theories and their proponents in conflict. The purpose of the present research is rather to increase their combined utility by placing them in a more reasonable perspective within the school setting. In the following statement Olson seems to have captured the essential nature of the task of reconciliation facing social scientists from different disciplines who wish to serve the eduational enterprise:

> "In contemporary concepts of development the contributions of heredity and environment are agreed to be indeterminate, and the important task is to study the process of interaction and, for a given individual, to improve the environment.

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[1] Gesell, Arnold L. "Growth and Personality", Infancy and Human Growth (Chap. XVII), New York: MacMillan, 1928.

[2] Olson, Willard C. "The Child as a Whole (Chap. VII)", Child Development, Second Edition, Boston: D.C. Heath, 1959.

[3] Krogman, Wilton M. "Physical Growth as a Factor in the Behavioral Development of the Child (Chap. 2)", New Dimensions in Learning, (Walter B. Waetjen, ed.), Washington, D.C., Association for Supervision and Curriculum Development, N.E.A..

> Thus, while the maturation process describes the potential capacities of the individual, experience determines the expression of that potential in development. Environment supplies the conditions for growth, and development is the end product of the interaction. Biological determinism has tended to place a strait jacket on planning for improvement through other than genetic means. The social approach also has at times excluded the additional processes which are at hand and the refinements which may be introduced by working with difference in a dynamic fashion. Much of the evidence which exists requires order and relationship and justifies an excursion into biosocial theory in a scrutiny, of social science as science.[1]" (pp. 201-02)[1]

With the above conciliatory statement in mind we are hopefully prepared to examine our data on the interrelationship of children's social and psychological development and academic achievement. Before proceeding let us again be reminded of the widely held assumption of a strong causal relationship whcih frequently serves as the basis for numerous remedial and corrective procedures designed to raise the level and reduce the variability of academic achievement for classroom groups. In their original formulation of the "organismic age" technique Olson and Hughes[2] suggested the possibility that the measures used represent an inclusive theory of the growing child. Although they recognized the need for further research involving, among others, variables of emotionality and social adjustment, one easily gets the impression that a strong relationship was anticipated. In part the present project was designed so as to meet that need on a larger scale than has heretofore been attempted.

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[1] Olson, Willard C. "Biosocial Theory in Human Development", The State of the Social Sciences (Leonard D. White, Ed.), University of Chicago Press, pp. 201-211.

[2] Olson, Willard C. and Hughes, Byron O., op. cit. p.

THE DATA ON ACADEMIC ACHIEVEMENT AND SOCIAL AND PSYCHOLOGICAL VARIABLES

The intercorrelations of academic achievement (Ed.A) and social and psychological variables are presented in Table 50. Only those variables significantly related to Ed.A, 16 from a total of 23, are included. Conventional learning process and rigid vs. flexible classroom are the only variables significantly related for all three years. The correlations for these are reliable and significant at the .01 level but negative. Five of the other variables show significant correlations with Ed.A for 2 years and 4 for one year. The range in correlation values is from -.47 to +.31.

By way of contrast the correlation between Ed.A and organismic age is reliable, significant at the .01 level, positive and, in addition, substantially larger than those obtained for any of the social and psychological variables. The differences in academic achievement accounted for by the two types of variables is indicated by 22% for rigid vs. flexible classroom which has the highest intercorrelation among the classroom variables compared to 59% for organismic age on the basis of its lowest intercorrelation which occurs

TABLE 50

INTERCORRELATION OF ACADEMIC ACHIEVEMENT (ED.A) AND SOCIAL AND PSYCHOLOGICAL VARIABLES FOR 1962, 1963, AND 1964

Variable	Year		
	1962	1963	1964
A. School Classroom			
Motivation	19		-23
Teacher/Learning Facilitator		23	
Conventional Learning Process	-25	-28	-28
Complementary Learning Process			-21
Learning Index		-16	-35
Rigid vs. Flexible	-47	-46	-47
Acceptance Given	20		
School Anxiety			31
Emotionally Supportive Room		19	
Mental Health Index		19	17
Self Norms		26	22
B. Self Concept			
Social Self Esteem	-22		-29
C. Needs			
Affiliation	-23		
D. Growth Data			
Individual IQ (Binet or WISC)			25
Group IQ (PMA)	45	45	48
Organismic Age	82	84	77
Individual IQ (Binet or WISC) With Ed.Q	53	56	56

Significance at .05 level is not underlined.

Significance at .01 level is underlined.

in 1964. Mental maturity appears to occupy a position between the other two variables as a predictor of academic variability. The absence of a significant correlation between individual IQ and educational age for 1962 and 1963 and the low correlation for 1964 are due to differences in distribution, the IQ being restricted and skewed to the left. This discrepancy has been adjusted by using Ed.Q as well as Ed.A. The resultant coefficients at the bottom of Table 48 are consequently very similar to those secured for the PMA IQ for which the distribution is similar to Ed.A.

The data presented in Table 50 fail to provide evidence in support of either a strong or reliable relationship between the social and psychological variables used in this study and academic achievement. This finding is in substantial agreement with those of Lavin[1] and Wolf[2]. However the assumption that academic achievement is primarily a function of development as represented by organismic age is supported. These data suggest the possibility that we are dealing here with two global human achievement factors, academic and personal-social, which in general are not highly related among members of classroom groups. Additional support for this

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[1] Lavin, David E., "Intellective Factors as Predictors" (Chap. 4), "Personality Factors as Predictors" (Chap. 5), The Prediction of Academic Performance, New York: Russell Sage Foundation, 1965.

[2] Wolf, Martin G., "Effects of Emotional Disturbance in Childhood on Intelligence," American Journal of Orthopsychiatry, Vol. XXXV, No. 5, October 1965.

TABLE 51

INTERCORRELATIONS OF ORGANISMIC AGE AND SOCIAL AND PSYCHOLOGICAL VARIABLES

Variable	Year 1962	 1963	 1964
A. Classroom			
Motivation	18		-33
Teacher/Learning Facilitator		20	-19
Conventional Learning Process	-23	-33	-37
Complementary Learning Process			-25
Learning Index		-21	-46
Rigid vs. Flexible	-55	-54	-58
Acceptance Given	26		
Social Climate Index			-21
School Anxiety			21
Self Norms	-26	23	-26
B. Self Concept			
Personal Self Esteem	28		
Social Self Esteem	-33	-20	-38
C. Needs			
Influence	21		

Significance at .05 level is not underlined.

Significance at .01 level is underlined.

proposition is provided by the data in Table 51 which presents interrelationships between organismic age and 13 social and psychological variables from a total of 24. Three variables show a significant positive relationship, each for one year. Both positive and negative relationships for different years are shown for three other variables. Significant negative relationships are demonstrated for 2 variables for one year, 2 for two years, and 3 for three years. By virtue of their exclusion from Table 51, the remaining variables show no relationship to organismic age.

The data presented in Table 51 are important for another reason. They reduce the probability that the high intercorrelation between OA and Ed.A is attributable to the fact that reading age is contained in both.

Thus it is possible to assume that variability in academic achievement and personal-social achievement each have a distinct matrix of determiners, the former predominately genetically orientated and the latter predominately environmentally orientated. Viewed empirically, the idea appears plausible. A child predisposed to marginal academic achievement by virtue of comparatively poor organismic endowments need not at the same time be predisposed to a distorted and debilitating relationship with himself, his peers, his teacher and his classroom environment. The following four equations based in part on our data are intended to illustrate the hypothetical types of cases to be expected at the extremes in classroom groups:

1. High organismic endowment + constructive home and school management = high overall school achievement.

2. Low organismic endowment + constructive home and school management = low academic achievement + high personal social achievement.
3. High organismic endowment + detrimental home and school management = high academic achievement + low personal social achievement.
4. Low organismic endowment + detrimental home and school management = low overall school achievement.

The equations assume that at present academic achievement and personal social achievement vary independently to some degree. But they do not do so sufficiently for reliable predictions and not enough to protect some children from becoming victims of a level of academic achievement which is for them optimum but is at the same time less than the best or less than that of which they are erroneously judged capable. Theoretically, any present discernable negative relationship between academic and personal social achievement may be attributable to Cannon's Wisdom of the Body which according to Olson "enables children to make wise choices in matters educational."[1] It might be added here to also persist in those choices, in the face of environmental pressures with whatever means are available. Additional theoretical support is likewise provided by Harlow[2] whose learning theory assumes a primary tendency to establish transactional relationships with a stimulating environment (the classroom) in the absence of second-order drives or motives which are thought by some to be dependent on high personal-social achievement, i.e. adjustment.

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[1] Olson, Willard C. "Developmental Theory in Education," The Concept of Development (Dale B. Harris, ed.), University of Minneapolis Press, 1957, p. 272.

[2] Harlow, Harry F. "Mice, Monkeys, Men, and Motives," Psychological Review, Vol. 60, 1953, pp. 23-32.

Referring again to the four equations we would expect only a small number of children to fit numbers 1 and 2 even under the most advantageous environmental conditions. The maximum possible number might be set at 16% in each group because of the normal distribution of the organismic variables. A hopeful purpose of wise educational planning might be that of reducing the number of children who at present fit equations 3 and 4. Hopefully this might raise the level and reduce the variability of personal-social achievement for many classroom and school groups. To implement this purpose would, however, require attention to three major obstacles: (1) a cultural resistance to understanding and planning for the wide variability in academic achievement which is normal for most classroom groups, (2) the preoccupation of school administrators, teachers and psychologists with psychologically based remedial and corrective procedures in preference to at least equal concern for developing sound classroom, school and system-wide programs of applied educational psychology, and (3) a prevailing reluctance to recognize that the capacity of school programs to promote optimum personal social achievement in the face of severe home and community deprivations is still questionable.

SUMMARY AND CONCLUSIONS

The first task undertaken by the project staff was to construct a set of instruments for the collection of data on children's social and psychological development. The purpose was to produce instruments with a closer relationship to the classroom setting and the interests and concerns of teachers than most of the available ones seem to provide. A large pool of items was gathered and administered to a stratified sample of 430 third, fifth, seventh, ninth and eleventh grade children in a large school system. The resultant data were put through an extensive statistical analysis which was culminated in a factor analysis. From the findings three types of instruments were constructed: a classroom questionnaire, a semantic differential and a card sort. The instruments were then used with the University School sample to collect data on (1) the classroom environment with sub-dimensions for learning, social structure, social climate, and mental health, (2) self concept, and (3) felt needs. The sample selected consisted of grades 3, 4, 5, 7, 8 and 9 for 1962. The instruments were used again on the same children at higher grade levels in 1963 and 1964. This design produced both longitudinal and cross grade data. The final result was 1 third grade, 2 fourth grades, 3 fifth grades, 2 sixth grades, 2 seventh grades, 2 eighth grades, 3 ninth grades, 2 tenth grades, and 1 eleventh grade.

Data on the growth, maturation, learning ability and academic achievement of the sample groups were secured from the cumulative records of the University School. The data are organized according to a theoretical model which provides an organismic age variable and an educational achievement variable. According to the theory a significant causal relationship is hypothesized for these two variables. The data presented in Chapter 8 provides strong support for the hypothesis. The dominant purpose of the present study is to inquire into the nature and extent of any interrelationship between the academic achievement and the personal-social achievement variables. In other words to determine whether the organismic hypothesis provides an inclusive developmental theory.

On the basis of data presented in this study the following tentative conclusions are suggested. Pending a replication of the data collection on larger and more representative samples, generalizations must be limited to the population for which the subjects used in this study constitute a sample.

1. A number of identifiable and measurable psychological and social variables play an important part in the personal-social achievement of classroom groups. While there are unique patterns in particular classrooms which tend to maintain over time, there is also evidence of change and the possibility of planned interventions. As yet the cross-section and longitudinal interrelationships of these variables is largely uncertain. As in the analysis of an individual's characteristics, the study of ideosyncratic classroom characteristics and possible significance is never

a simple one-to-one condition. The teacher will have to take into account special interactive aspects of the constellation of the group.

2. Data on classroom social structure and social climate are not consistent with theoretical formulations as to what children perceive. The necessity for a careful and critical review of existing hypotheses is indicated.
3. A perceived emotionally supportive milieu appears to play a very important part in children's lives in the classroom.
4. As children progress through the elementary and secondary grades their self image and self esteem take on an increasingly negative quality. This, like other characteristics studied when applied to individual cases, is not a simple acting phenomenon. For example, patterns and interactive aspects must be considered to appreciate either the accumulation of feelings about one's self or the way such accumulated feelings are reflected in behavior in other areas.
5. The current stress on academic achievement has not forced children's need for achievement into a dominant position. The need for affiliation is the most pronounced. Furthermore, there is no relationship between need for achievement and academic achievement.
6. When viewed as two global variables personal social achievement and academic achievement are not related significantly in classroom groups. Consequently if assisting children with their personal social achievement is a worthy classroom purpose, it must be justified on the basis of its own merits.

In summary, the findings of this research have important implications for educational planning. The most important is the possibility of providing real improvements in the personal-social achievement of many children irrespective of their academic achievement. The essential task of teachers is to prevent the development of a high positive relationship between personal-social and academic achievement in the classroom. They should find encouragement from the point made in Chapter 4 that an improvement in children's self image and self esteem will make them easier to teach. It is not axiomatic, however, that children who become easier to teach, as a result of improvements in their personal-social adjustment, will show either a rise in or a decrease in variability for academic achievement.

APPENDICES

APPENDIX I

CODE MANUAL

GENERAL INFORMATION OF MANUAL FORMAT

The designation "column" and the ensuing number(s) refers to the appropriate column on the IBM code sheet and IBM card punch.

This manual contains the following information for each entry:

1. A title for the data.
2. IBM code numbers and column numbers
3. Question
4. Appropriate response categories.

When refering back to actual instrument, note that Column begins with 2 in manual however, begins with 1 on instrument, therefore add one throughout Cd. I.

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Part I

Cd.	Col.	
I	2	When we work in groups or committees. We always work in the same group (1) or we change group members almost every time. (4)
	3	If there were some new rules about how class members sould act in class, who would decide what the rules would be. Just the teacher. (1) or the class by itself.(4)
	4	If the class had leaders who helped run the class, who would decide what pupils are to be leaders. Just the teacher (1) or Just the class by itself. (4)
	5	When the class is discussing things, what do you do? Think about other things you would rather be doing. (1) or Offer ideas whenever you can. (4)
	6	If I had a problem in class, I think: Many of my classmates would help me. (1) or Hardly any of my classmates would help me. (4)
	7	If I didn't do well on a test, my classmates: Would try to make me feel better about it. (1) or Might laugh at me for doing poorly.
	8	When I am ready for the next grade, or to begin a new class: I would like most all of my classmates to go with me. (1) or I would not like any of my classmates to go with me. (4)

Part I

Cd.	Col.	
I	9	Some classes are very friendly and others are not. How friendly are the pupils in this class? Classmates are always friendly (1) or Classmates are often unfriendly. (4)
	10	In this class, I have a chance to express my own ideas. As often as I want to. (1) or Hardly ever. (4)
	11.	How much are you really a part of this class. Much less than the other members of the class. (1) or Much more than the other members of the class. (4)

Part II

How Often Things Happen.

CD.	Col.	A Almost Always B Much of the time C Sometimes D Hardly Ever
I	12	Do you find yourself thinking about other things when you're supposed to be doing the classwork?
	13	Do you really like to do the work in this class.
	14	Do you really know for sure whether the work you do is right or wrong?
	15	How often do you get bored in this class.
	16	Does the teacher correct your work so you know how well you do?
	17.	Do you use what you learn in class to help you outside of school.

Cd.	Col.	
I	18	Do problems you work on in school usually have only one right answer?
	19	When you are outside of school do you talk about things you learn in class?
	20	Does it seem that the main thing in class is to let your mind act like a sponge and soak up as much as possible.
	21	On tests are you asked to "fill in the blank" or give dates.
	22	Do problems you work in school have several answers that are right.
	23	After you've finished studying something, does the teacher ask you how good you think the ideas are.
	24	Does the teacher give attention to individuals in your class who don't seem to understand the work?
	25	Do you have to remember lists of things in the right order.
	26	How often are you asked to see how many different ideas you can think up about a problem?
	27	Are you ever asked to decide whether things you are learning agree with ideas you've had in the past?
	28	Do you have homework in which you have to memorize things.
	29	In this class are you asked to try new or different ways of doing things.

Cd.	Col.	
I	30	How often do just a few kids decide everything in this class?
	31	Do you help in deciding what activities the class will do?
	32	Can you choose the pupils you will work with in class activities?
	33	In this class can you choose individual things for just yourself to do.
	34	Are some pupils permitted to work ahead while others are given more time to do the work.

Part III

How Much Do You Like Each One - Sociometric

			A Lot	Some	A Little	Very Little
I	35	Sociometric				
	36	Sociometric				
	37	Sociometric				
	38					
	39					

Part IV

My Classmates' Opinions

1 Almost everyone 2 Many pupils 3. Some pupils 4. Only a few

I	40	It is good to take part as much as possible in classroom work.
	41	School wokk is more fun than not fun.

Cd.	Col.	
I	42	It is better to be friendly with classmates than with the teacher.
	43	Pupils should help classmates who do not understand the classwork.
	44	It is important to try to be friendly with every member of the class.
	4545	It is normal to get worried over tests and your schoolwork.
	46	Pupils should work as hard as possible on their schoolwork.
	47	If kids worry about school, they shouldn't admit it to other pupils.
	48	School is a place where you can be happy and enjoy yourself.
	49	Pupils should work with all class members not just special friends.
	50	Pupils have a duty to help keep order.
	51	Everyone, no matter who, whould have his say about things in class.
	52	Memorizing school lessons is very important.
	53	It is often a good thing to figure out more answers for things than just those answers the teacher gives.
	54	Teachers should make the decisions about what goes on in class.

Cd.	Col.	
I	55	There should always be regular daily assignments in class.

Part V

What is Your Opinion

4 Almost Always 3 Usually 2 Sometimes 1 Hardly Ever

Cd.	Col.	
I	56	This teacher checks our work to make sure that we are on the right track.
	57	This teacher makes most everything seem interesting and important.
	58	This teacher keeps order with a firm hand.
	59	This class behaves well even when the teacher is out of the room.
	60	In this class no one wants to tell you anything for fear you will get better marks than they get.

Part VI

How Often Do You Feel This Way About This Class

Cd.	Col.	
I	61	I feel there are too many rules.
	62	This teacher upsets me by things he does.
	63	I get bothered about kids talking behind my back in this class
	64	Just thinking about this class makes me sick.
	65	Some classes are places you like to be, some are not. I like being in this class.

Cd. Col.

I 66 Pupils in this class get mixed up and are not sure what they are supposed to do.

67 Pupils get away with doing things they shouldn't in our class.

68 The teacher wanders and gets off the subject.

69 This teacher lets us think for ourselves.

NOTE: COLUMNS 70 THROUGH 30 ARE USED FOR IDENTIFICATION PURPOSES.

Cd. Col. Part VII Adults Who Seem Alike

A Lot Some A Little Hardly at All

II 2 A person who really understands kids my age.

3 A person to talk to when you are unhappy.

4 A person who gets angry.

Part VIII

How This Class Seems To Me

Too Much Already I like it the way it is now

I wish it were a little more I wish it were much more

II 5 The way I am included in the group.

6 How friendly this class is.

Part IX

How Are Things In Class?

A Lot Some A Little Never

II 7 Do you worry before you take a test?

Cd.	Col.	
II	8	Do you feel the work in this class is so easy that you can do it without any worry.
	9	After you have taken a test, do you worry about how well you did on the test.
	10	Do you worry when the teacher says that she is going to ask you questions to find out how much you know about the lesson.
	11	When you think you are going to be called on by the teacher do you get a funny feeling in your stomach.
	12	Do you worry about being able to do the work in this class.

Part X

My Own Opinions About the Classroom

I feel very strongly this way.

I feel quite a bit this way.

I feel a little this way.

I don't feel this way at all.

Cd.	Col.	
II	13	It is good to take part as much as possible in classroom work.
	14	School work is more fun than not fun.
	15	It is better to be friendly with classmates than with the teacher.
	16	Pupils should help classmates who do not understand the classwork.

Cd.	Col.	
II	17	It is important to try to be friendly with every member of the class.
	18	It is normal to get worried over tests and your normal school work.
	19	Pupils should work as hard as possible on their school work.
	20	If kids worry about school, they shouldn't admit it to other pupils.
	21	School is a place where you can be happy and enjoy yourself.
	22	Pupils should work with all class members not just special friends.
	23	Pupils have a duty to help keep order.
	24	Everyone, no matter who, should have his say about things in school.
	25	What we learn in school helps us in what we do outside of school.
	26	Memorizing school lessons is very important.
	27	It is often a good thing to figure out more answers for things than just those answers the teacher gives.
	28	Teachers should make the decisions about what goes on in the classroom.

29 Teachers should give information right away on how well you do in your classwork

30 There should always be regular daily assignments in class.

SEMANTIC DIFFERENTIAL
SEVEN POINT SCALE

HOW I SEE MYSELF

Cd.	Col.		
II	31 3	good	bad
	32	uncertain	certain
	33	large	small
	34	beautiful	ugly
	35	sad	happy
	36	clean	dirty
	37	lazy	hardworking
	38	light	heavy
	39	never worry	worry a lot
	40	cold	hot
	41	honest	dishonest
	42	weak	strong
	43	awful	nice
	44	fair	unfair
	45	hate myself	like myself
	46	slow	fast
	47	thick	thin
	48	pretend	true

Cd. Col.

II 49 unimportant important

50 active passive

SELF ESTEEM INVENTORY

LIKE ME UNLIKE ME

51 I spend a lot of time daydreaming.

52 I'm pretty sure of myself.

53 I often wish I were someone else.

54 I'm easy to like

55 I find it very hard to talk in front of the class.

56 I wish I were younger.

57 There are lots of things about myself I'd change if I could.

58 I can make up my mind without much trouble.

59 I'm a lot of fun to be with.

60 I'm proud of my school work.

61 Someone always has to tell me what to do.

62 It takes me a long time to get used to anything new.

63 I'm often sorry for the things I do.

64 I'm popular with kids my own age.

65 I'm doing the best work that I can.

66 I give in very easily.

67 I can usually take care of myself.

Cd.	Col.	
II	68	I'm pretty happy.
	69	I would rather play with children younger than I.
III	2	I like to be called on in class.
	3	I understand myself.
	4	It's pretty tough to be me.
	5	Things are all mixed up in my life.
	6	Kids usually follow my ideas.
	7	I'm not doing as well in school as I'd like to.
	8	I can make up my mind and stick to it.
	9	I don't really like being a (boy), (girl).
	10	I have a low opinion of myself.
	11	I don't like to be with other people.
	12	I often feel upset in school.
	13	I often feel ashamed of myself.
	14	I'm not as nice looking as most people.
	15	If I have something to say, I usually say it.
	16	Kids pick on me very often.
	17	My teacher makes me feel I'm not good enough.
	18	I don't care what happens to me.
	19	I'm a failure.
	20	I get upset easily when I'm scolded.
	21	Most people are better liked than I am.
	22	I often get discouraged in school.
	23	Things usually don't bother me.

Cd.	Col.	
III	24	I can't be depended upon.

MY OPINIONS CARD SORT

1. Most Satisfying
2. Satisfying
3. Remainder
4. Unsatisfying
5. Least Satisfying

Cd.	Col.	
III	25	Working hard at any job I undertake.
	26	Being appointed or elected chairman when on a committee
	27	Arguing for my point of view when attacked by others.
	28	Being able to control the actions of others
	29	Knowing that I am the kind of person other people will like.
	30	Trying again after I have failed.
	31	Convince people about something they don't agree with.
	32	Being good at solving hard problems in school
	33	Being able to persuade and influence others to do what I want.
	34	Sharing most of my thoughts with my friends.
	35	Solving unusual problems
	36	Being with people I know and like
	37	Being able to say that I have done a difficult job
	38	Having the chance to supervise and direct the actions of others
	39	Being with a whole bunch of kids - where everyone is friendly
	40	Doing my very best in everything I undertake

Cd.	Col.	
III	41	Knowing how other people feel when they have troubles or problems.
	42	Making decisions about what we are going to do when I'm in a group.
	43	Being thought of as a leader
	44	Getting difficult goals for myself and trying hard to reach them.
	45	Knowing that I can make friends.
	46	Always sharing things with my friends.
	47	Knowing that my friends feel the same way I do about things.
	48	Keeping at my school work until I get it done.

HOW IMPORTANT IS THIS TO ME

4	Very Important
3	Important
2	Not Very Important
1	Unimportant

III	49	Giving my own ideas even when no one else agrees with me.
	50	Letting my imagination go when I want to.
	51	Following my own interests even though other people may not think that they're important.

APPENDIX II

UNIVERSITY SCHOOL CLASSROOM RESEARCH PROJECT

Code Manual for Standard Score
1965

The first 15 variables were obtained from the factor analysis of the 1963 Revised Classroom Questionnaire. High end of Scale is always a positive condition viz high motivation, absence of anxiety, etc. Standard scores based upon a M of 100 and SD of 20 were developed for each grade level. The code nombers refer to items as listed in Revised Code Manual not the Questionnaire itself. Punch order is 1, 2, 3, 4, on all scales, but underlined items are reversed in punching to total conform with high=good. Some are keyed in reverse, not noted in the code manual but available in factor sheet. All punched scores are in standard score of M = 100; SD = 20.

School Classroom Research Cards 1 - 2

Output Variable	Card Location	
	Card Col.	Card No.
1. Motivation: Interest and involvement in classroom activities, liking for the work and classroom. (L-12, I-15, I-5, I-13, II-14, I-65)	8-11	I
2. Teacher as Learning Facilitator: Teacher gives attention to you, motivates, keeps you on right track, keeps good order. (I-56, I-16, I-57, I-24, I-58, I-68, I-59)	12-15	I

	Card Col.	Card No.
3. Conventional Learning Process: Memorization and convergent thinking required in classroom learning (I-28, I-25, I-18, I-22, I-20	16-19	I
4. Complementary Learning Process: Utilization, innovation and divergency required in classroom learning. (I-27, I-17, I-19, I-26, I-23, I-29, I-31, I-21)	20-23	I
*5. Learning Index: Comprised of 1, 2, 3, 4 above.	24-27	I
6. Rigid Versus Flexible: Flexible indicates individual choice of activities, and pace of work. (I-34, I-33)	28-31	I
7. Generally Accepting Social Climate: Class interpersonal support, friendliness. (I-9, I-6, I-7, I-8, I-11)	32-35	I
8. Acceptance Given: Total acceptance and liking given to all other pupils in classroom. (I-36) (Multiplied by 10)	40-43	I
*10. SOCIAL CLIMATE INDEX: Total of 6,7,8,9 above	44-47	I
11. School Anxiety Anxiety regarding school, tests, and adequacy in school tasks. A high score is absence of anxiety. (II-7, II-10, II-9, II-12, II-11, II-8)	48-51	I
12. Emotionally Supportive Classroom: Emotional support found in peer relationships, teacher behavior and class design. (I-69, I-66, II-4, II-2, I-60, I-63, I-62, I-61, I-64, I-10, I-67, II-6)	52-55	I
*13. Mental Health Index: Total of 11, 12 above.	56-59	I

		Card Col	Card No.
14.	Self Norms: Expression of self-held values covering the classroom areas above. High is in keeping with the adult standards. (II-24, II-27, II-19, II-30, II-17, II-23)	60-63	I
15.	Group Norms: Imputed values for peer group covering area 14. (I-46, I-53, I-51, I-55, I-44, I-50)	8-11	II
*16.	SEMANTIC DIFFERENTIAL: Eight stimulus pairs focused on myself. Range 1-7 points each, reversed in underlined items. (II-31, 34, 35, 36, 41, 43, 44, 49)	12-15	II
*17.	TOTAL SELF ESTEEM Includes 18, 19, 20 below	16-19	II

NOTE: Underlined items score unlike me responses; otherwise, score like me

		Card Col	Card No.
18.	Personal Self Esteem: Sense of self adequacy. (II-51, 52, 53, 56, 57, 58, 61, 62, 63, 66, 67, 68, III-3, 4, 5, 8, 9, 10, 13, 14, 15, 18, 19, 20, 23, 24)	20-23	II
19.	Self Esteem with Regard to Social Relationships: Self adequacy with peers. (II54,59, 64, 69, III-6, 11, 16, 21)	24-27	II
20.	Self Esteem With Regard to School: (II-55, 60, 65, III-2, 7, 12, 17, 22)	28-31	II

NOTE: All Need scores (21, 22, 23 below) are arrived at as follows:

Most satisfying	5
Satisfying	4
Remaining	3
Unsatisfying	2
Least satisfying	1

		Card Col	Card No.
21.	Need-Achievement Need of achievement, grades, and accomplishment as basic motivational pattern. (III-25, 30, 32, 35, 37, 40, 44, 48)	32-35	II

	Card Col.	**Card No.**
22. Need - Affiliation: Need for affiliation as basic motivational pattern. (III-29, 34, 36, 39, 41, 45, 46, 47)	36-39	II
23. Need - Influence: Need for influence, power, or social dominance as basic motivational pattern. (III- 26, 27, 28, 31, 33, 38, 42, 43)	40-43	II
24.		
CODE IDENTIFICATION SHEET		
Grade pupil's group was first tested in (whether he was there or not). Punch 1 for Grade 3 2 4 3 5 4 6 5 7 6 8 7 9 8 10 9 11	71	
Sex Punch 1 - Male 2 - Female	72	
Punch a given number according to alphabetical list.	73-74	
These columns will determine what years they were tested. 75 for 62 76 for 63 77 for 64 Follow same system as Column 71, punch 1 for 3rd grade, etc.	75-77	
Year this test taken 1961-62 is punched '62 1962-63 is punched '63 1963-64 is punched '64	78-79	
Card # of Data Set:	80	

	Card Col.	Card No.
24. Identification Code: (Col. 66-70 reserved for University School Pupil-Family Code)	(See Above)	
Grade of first test (Grade # + 2)	71	
Sex: 1=Male 2=Female	72	
List #: i.e., School Assigned by Project	73-74	
Grade in 1962, 1963, 1964 (Grade = Code # + 2)	75-77	
Year this data taken	78-79	
Card # of Data Set	80	
25. Chronological Age: Age in months at time of testing.	2-4	III
26. Individual Binet or Weschler IQ: Index of total learning ability.	5-7	III
27. Group PMA IQ: Index of total learning ability based on the factor theory of mental abilities which make up intelligence.	8-10	III
28. Educational Age: Average of reading, mathematics, mechanics of English, and spelling ages obtained from the California Achievement Tests.	11-13	III
29. Educational Quotient: Educational age divided by chronological age, multiplied by 100.	14-16	III
30. Reading Age: Total reading score from the California Achievement Tests translated and converted to an age equivalent.	17-19	III
31. Reading Quotient: Reading age divided by chronological age, multiplied by 100.	20-22	III
32. Organismic Age: Average of Height, weight, grip strength, dental, carpal, mental, and reading ages, an index of total development.	23-25	III

APPENDIX III

NORMATIVE DATA FOR CLASSROOM GROUPS BY YEAR

TABLE I

CROSS CLASS COMPARISONS FOR GRADE III

Variable	1962			1963			1964		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
1. Motivation	*V24	80.7	26.1				19	104.1	20.5
2. Teacher as Learning Facilitator	V24	86.1	25.7				19	103.2	23.2
3. Conventional Learning Process	V24	101.5	20.7				19	92.3	16.9
4. Complementary Learning Process	V24	106.9	21.8				19	84.2	16.7
5. LEARNING INDEX	V24	91.6	26.1				19	90.1	22.8
6. Rigid vs Flexible	V24	112.1	20.7				19	100.6	16.9
7. Generally Accepting Social Climate	V24	93.2	22.5				19	87.6	14.5
8. Acceptance Given	V23	89.1	14.0				19	82.3	16.8
9. Acceptance Received	V24	84.0	15.7				22	86.4	10.9
10. SOCIAL CLIMATE INDEX	V24	85.8	17.6				22	72.9	27.7
11. School Anxiety	V24	86.4	13.3				19	86.0	20.5
12. Emotionally supportive Classroom	V24	82.1	16.3				19	91.6	18.7
13. MENTAL HEALTH INDEX	V24	74.3	18.8				19	85.5	19.9
14. Self Norms	V22	99.5	23.6				19	105.2	19.5
15. Group Norms	V22	84.8	20.5				18	96.4	19.5
16. SEMANTIC DIFFERENTIAL	V11	87.7	20.5				21	76.1	22.4
17. TOTAL SELF ESTEEM	V11	98.4	26.4				19	101.0	28.5
18. Personal Esteem	V11	104.0	27.0				19	107.0	27.3
19. Social Self Esteem	V11	83.2	24.7				19	93.5	24.6
20. School Self Esteem	V11	101.6	19.9				18	99.5	20.7
21. Need - Achievement	V10	121.4	16.2				21	113.7	20.3
22. Need - Affiliation	V10	103.3	10.6				21	103.1	15.6
23. Need - Influence	V10	90.2	18.7				21	85.5	25.9
24. Sex	V24	1.4	.5				23	1.4	.5
25. Chronological Age	V22	103.7	4.5				23	106.4	4.3
26. Individual IQ Binet or Weschler	V21	129.9	14.6				23	128.3	15.8

*V stands for Variable N

TABLE I

CROSS CLASS COMPARISONS FOR GRADE III (Cont'd)

Variable	1962			1963			1964		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
27. Group PMA IQ	V12	120.8	17.9				18	129.9	17.7
28. Educational Age	V22	111.7	11.3				23	118.7	13.5
29. Educational Quotient	V22	108.8	12.7				23	117.2	14.5
30. Reading Age	V22	112.8	14.3				23	121.7	16.6
31. Reading Quotient	V22	110.0	16.1				23	120.3	17.9
32. Organismic Age	V22	110.8	8.2				23	117.1	9.5

TABLE II

CROSS CLASS COMPARISONS FOR GRADE IV

Variable	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
1. Motivation	**C19	97.6	13.2	13	102.2	24.7			
	*V24	99.6	13.3	20	99.4	24.1			
2. Teacher as Learning Facilitator	C19	105.5	15.0	13	105.2	13.0			
	V24	106.3	15.1	20	103.9	15.6			
3. Conventional Learning Process	C19	99.7	20.2	13	95.6	17.0			
	V24	99.4	18.0	20	96.8	15.2			
4. Complementary Learning Process	C19	103.2	20.0	13	93.8	17.0			
	V24	103.8	18.6	20	92.9	18.5			
5. LEARNING INDEX	C19	102.0	23.9	13	96.1	15.0			
	V24	103.3	22.7	20	94.4	19.2			
6. Rigid vs Flexible	C19	114.1	15.9	13	100.5	13.5			
	V24	115.1	16.3	20	102.2	14.8			
7. Generally Accepting Social Climate	C19	106.1	16.6	13	93.1	16.3			
	V24	108.0	16.6	20	95.8	17.3			
8. Acceptance Given	C19	94.3	21.6	13	90.5	10.7			
	V24	92.9	19.8	20	89.4	13.3			
9. Acceptance Received	C19	103.2	17.0	13	97.6	13.4			
	V24	105.7	21.1	21	94.9	13.0			
10. SOCIAL CLIMATE INDEX	C19	105.3	19.1	13	90.7	13.8			
	V24	106.1	20.7	21	83.1	36.4			
11. School Anxiety	C17	92.2	11.6	13	92.7	22.2			
	V22	93.4	10.7	20	94.0	21.5			
12. Emotionally Supportive Classroom	C19	77.1	15.4	13	84.7	13.8			
	V24	76.1	14.9	20	82.8	16.4			
13. MENTAL HEALTH INDEX	C19	70.7	30.1	13	84.6	19.8			
	V24	71.8	27.2	20	83.7	23.1			
14. Self Norms	C17	99.8	17.2	13	96.2	24.3			
	V22	99.6	18.6	20	99.3	23.1			
15. Group Norms	C19	95.6	23.1	13	98.2	20.7			
	V24	97.5	21.2	20	99.9	22.3			
16. SEMANTIC DIFFERENTIAL	C10	94.4	21.4	13	100.5	26.3			
	V12	96.1	20.0	20	100.9	24.9			
17. TOTAL SELF ESTEEM	C10	126.0	11.2	13	108.5	22.9			
	V12	127.3	11.0	20	107.9	24.0			

*V stands for Variable N
**C stands for Constant N

TABLE II

CROSS CLASS COMPARISONS FOR GRADE IV (Cont'd)

Variables	1962			1963			1964		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
18. Personal Self Esteem	C10	125.8	11.8	13	110.7	21.9			
	V12	126.5	11.5	20	109.9	23.5			
19. Social Self Esteem	C10	113.2	17.9	13	105.5	18.2			
	V12	114.4	16.6	20	103.1	18.0			
20. School Self Esteem	C10	117.2	10.1	13	99.4	20.5			
	V12	118.7	9.8	20	101.7	21.0			
21. Need - Achievement	C 8	113.1	14.9	13	100.5	21.4			
	V12	116.3	13.5	20	100.9	21.1			
22. Need - Affiliation	C 8	110.0	12.8	13	100.8	11.8			
	V12	106.2	13.2	20	101.2	15.1			
23. Need - Influence	C 8	92.5	17.9	13	101.3	27.0			
	V12	92.5	16.1	20	99.5	24.4			
24. Sex	C19	1.6	.5	13	1.3	.5			
	V24	1.5	.5	21	1.3	.5			
25. Chronological Age	C19	114.6	4.3	13	117.2	3.1			
	V24	115.0	4.1	20	116.8	4.2			
26. Individual IQ Binet or Weschler	C19	125.2	22.8	13	126.8	15.8			
	V24	125.0	21.4	19	131.0	16.1			
27. Group PMA IQ	C13	115.5	23.3	10	113.2	11.8			
	V16	117.3	22.7	13	119.2	18.0			
28. Educational Age	C19	130.6	15.3	13	117.9	14.9			
	V24	131.3	16.6	20	124.4	17.6			
29. Educational Quotient	C19	113.4	13.5	13	104.6	14.6			
	V24	113.4	13.5	20	110.0	15.9			
30. Reading Age	C19	139.8	25.9	13	118.4	18.7			
	V24	141.5	27.4	20	125.6	20.7			
31. Reading Quotient	C19	121.4	23.1	13	105.2	17.4			
	V24	122.3	23.4	20	111.3	19.0			
32. Organismic Age	C19	119.9	12.6	13	120.0	6.5			
	V23	121.7	13.3	20	124.9	10.1			

TABLE III

CROSS CLASS COMPARISONS FOR GRADE V

Variables	1962			1963			1964		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
1. Motivation	**C21	88.9	15.4	19	112.2	14.6	13	119.6	15.4
	*V25	89.5	14.8	24	112.1	14.2	20	113.9	17.9
2. Teacher as Learning Facilitator	C21	115.9	16.3	19	126.6	15.5	13	120.5	14.6
	V25	116.5	15.7	24	125.8	14.8	20	119.3	14.2
3. Conventional Learning Process	C21	113.6	15.3	19	118.2	12.4	13	98.3	19.2
	V25	113.7	16.2	24	113.6	16.0	20	98.2	17.7
4. Complementary Learning Process	C21	110.5	16.1	19	92.4	21.5	13	94.8	13.5
	V25	111.4	15.8	24	91.4	19.6	20	93.9	15.5
5. LEARNING INDEX	C21	111.1	14.3	19	116.9	16.7	13	113.5	13.3
	V25	111.9	13.7	24	114.8	16.1	20	110.1	16.2
6. Rigid vs Flexible	C21	122.8	13.6	19	115.7	14.4	13	104.1	20.0
	V25	123.6	13.5	24	115.1	16.5	20	105.9	19.0
7. Generally Accepting Social Climate	C21	103.8	22.6	19	119.1	12.5	13	116.5	20.6
	V25	105.6	21.0	24	116.9	13.0	20	105.6	21.1
8. Acceptance Given	C21	89.8	14.6	19	107.0	16.9	13	103.2	10.4
	V25	90.5	13.7	24	107.0	16.3	20	104.5	14.5
9. Acceptance Received	C21	92.1	17.1	19	105.0	24.7	13	111.1	13.0
	V25	92.5	16.5	24	105.5	23.9	20	108.4	14.8
10. SOCIAL CLIMATE INDEX	C21	95.0	23.8	19	115.3	21.4	13	115.9	12.4
	V25	96.1	22.3	24	114.7	20.0	20	113.8	16.2
11. School Anxiety	C20	103.4	9.8	19	86.4	18.9	13	110.9	18.4
	V24	103.3	9.5	24	85.4	18.8	20	108.2	15.7
12. Emotionally Supportive Classroom	C21	87.6	15.5	19	104.3	18.6	13	102.6	18.4
	V25	86.5	14.4	24	102.8	16.8	20	99.8	16.9
13. MENTAL HEALTH INDEX	C21	90.7	20.7	19	97.2	19.5	13	108.1	19.9
	V25	90.2	19.0	24	95.7	18.6	20	104.7	17.7
14. Self Norms	C20	99.7	16.1	19	101.0	13.6	13	97.9	16.9
	V24	99.9	15.7	24	98.5	14.0	20	97.5	15.7
15. Group Norms	C21	92.9	14.2	19	111.3	14.2	13	101.7	18.8
	V25	94.6	14.3	24	111.7	13.3	20	99.3	19.4
16. SEMANTIC DIFFERENTIAL	C21	78.6	20.0	19	96.5	22.6	13	98.4	19.4
	V25	82.2	20.5	23	95.2	21.6	20	98.9	23.9
17. TOTAL SELF ESTEEM	C21	92.3	24.8	19	110.7	22.1	13	111.5	14.3
	V25	94.0	23.9	23	109.4	21.7	20	108.8	15.3

*V stands for Variable N
**C stands for Constant N

TABLE III

CROSS CLASS COMPARISONS FOR GRADE V (Cont'd)

Variables	1962			1963			1964		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
18. Personal Self Esteem	C21	99.1	23.7	19	113.6	17.6	13	114.6	12.8
	V25	100.2	22.9	23	113.0	17.1	20	111.0	14.2
19. Social Self Esteem	C21	104.0	24.6	19	114.5	19.3	13	112.7	17.0
	V25	108.2	24.6	23	113.4	19.7	20	113.5	19.0
20. School Self Esteem	C21	83.8	21.6	19	103.2	24.9	13	105.1	20.4
	V25	82.8	21.9	23	101.1	24.5	20	103.7	19.0
21. Need - Achievement	C21	105.9	21.5	18	112.2	33.7	13	97.9	22.2
	V25	106.4	20.0	23	108.7	30.6	20	95.2	23.3
22. Need - Affiliation	C21	106.1	24.4	18	99.1	22.3	13	99.0	11.8
	V25	106.2	23.0	23	99.9	19.9	20	102.8	16.9
23. Need - Influence	C21	98.5	18.8	18	96.8	25.2	13	100.5	20.3
	V25	98.2	17.3	23	96.8	23.3	20	98.9	20.3
24. Sex	C21	1.4	.5	19	1.6	.5	13	1.4	.5
	V25	1.4	.5	25	1.6	.5	22	1.5	.5
25. Chronological Age	C21	127.8	4.8	19	126.6	4.3	13	129.2	3.1
	V25	127.9	4.9	24	126.5	4.1	20	128.1	4.3
26. Individual IQ	C21	135.1	15.1	19	125.2	22.8	13	125.5	15.7
Binet or Weschler	V25	133.2	14.7	24	124.0	21.3	20	126.6	17.3
27. Group PMA IQ	C20	115.8	12.8	19	119.2	24.1	10	113.2	11.8
	V23	114.3	12.6	23	118.9	22.9	11	113.9	11.4
28. Educational Age	C21	137.8	20.1	19	137.5	16.9	13	134.4	24.9
	V25	134.6	20.2	24	140.0	17.6	20	139.1	24.5
29. Educational Quotient	C21	112.5	16.5	19	113.0	13.6	13	108.3	21.0
	V25	110.1	16.6	24	114.3	13.9	20	113.1	20.7
30. Reading Age	C21	147.9	28.5	19	139.3	19.3	13	142.1	30.1
	V25	143.0	28.5	24	142.9	21.1	20	144.9	28.5
31. Reading Quotient	C21	121.0	23.7	19	114.4	15.6	13	114.7	25.3
	V25	117.1	23.7	24	116.6	16.6	20	118.0	23.9
32. Organismic Age	C21	138.1	11.3	19	130.5	14.8	13	137.2	8.0
	V25	136.9	11.1	24	130.7	14.0	20	137.1	12.7

TABLE IV

CROSS CLASS COMPARISONS FOR GRADE VI

Variables	1962 N	1962 Mean	1962 S.D.	1963 N	1963 Mean	1963 S.D.	1964 N	1964 Mean	1964 S.D.
1. Motivation				**C21	109.7	17.2	19	119.3	16.1
				*V26	111.2	17.3	24	119.0	15.5
2. Teacher as Learning Facilitator				C21	124.5	16.7	19	132.7	24.0
				V26	123.5	15.6	24	133.7	22.3
3. Conventional Learning Process				C21	104.0	17.1	19	109.3	17.7
				V26	103.7	16.0	24	107.6	18.9
4. Complementary Learning Process				C21	89.8	18.4	19	103.7	19.3
				V26	91.2	19.8	24	104.8	20.0
5. LEARNING INDEX				C21	117.9	25.1	19	137.2	29.3
				V26	118.9	25.7	24	138.0	28.3
6. Rigid vs Flexible				C21	117.0	16.4	19	110.3	15.1
				V26	118.2	17.4	24	113.7	16.3
7. Generally Accepting Social Climate				C21	111.2	20.1	19	115.5	25.7
				V26	114.1	19.6	24	115.3	23.6
8. Acceptance Given				C21	89.1	12.7	19	109.0	13.9
				V26	89.5	12.8	24	109.3	13.7
9. Acceptance Received				C21	88.9	17.9	19	104.8	15.7
				V26	88.4	17.5	24	105.4	14.9
10. SOCIAL CLIMATE INDEX				C21	95.8	17.6	19	119.2	20.8
				V26	97.2	17.5	24	120.0	19.2
11. School Anxiety				C21	97.7	26.3	18	87.9	20.3
				V26	96.2	25.0	22	87.7	21.0
12. Emotionally Supportive Classroom				C21	92.7	27.7	19	105.3	28.5
				V26	94.7	26.1	24	105.0	25.8
13. MENTAL HEALTH INDEX				C21	94.1	22.8	19	94.5	26.2
				V26	94.5	21.9	24	92.8	25.1
14. Self Norms				C21	97.2	18.0	18	108.4	15.1
				V26	98.7	18.2	22	108.1	16.5
15. Group Norms				C21	98.4	22.6	19	111.5	18.1
				V26	102.4	23.3	24	113.3	17.0
16. SEMANTIC DIFFERENTIAL				C21	95.3	18.0	20	98.7	23.7
				V26	93.9	19.3	22	97.1	24.3
17. TOTAL SELF ESTEEM				C21	104.6	20.4	21	98.9	24.1
				V26	106.3	20.1	24	97.1	23.2

*V stands for Variable N
**C stands for Constant N

TABLE IV

CROSS CLASS COMPARISONS FOR GRADE VI (Cont'd)

Variables	1962			1963			1964		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
18. Personal Self Esteem				C21	109.0	17.2	21	102.6	21.7
				V26	110.0	17.9	24	100.8	21.2
19. Social Self Esteem				C21	110.7	26.3	20	108.1	19.9
				V26	113.1	24.7	23	108.7	19.8
20. School Self Esteem				C21	96.7	18.4	21	97.1	18.7
				V26	97.8	17.7	24	94.4	20.6
21. Need - Achievement				C21	99.9	31.9	17	106.7	20.7
				V26	101.6	30.2	21	107.1	19.7
22. Need - Affiliation				C21	99.4	23.4	17	94.4	26.0
				V26	101.2	22.1	21	95.2	23.6
23. Need - Influence				C21	106.8	28.6	17	97.0	24.0
				V26	102.3	28.2	21	97.2	22.7
24. Sex				C21	1.4	.5	19	1.6	.5
				V26	1.4	.5	24	1.5	.5
25. Chronological Age				C21	139.8	4.8	19	138.7	4.3
				V24	140.0	4.9	24	139.2	4.0
26. Individual IQ Binet or Weschler				C21	135.1	15.1	19	122.7	19.6
				V24	133.4	14.7	24	121.8	19.5
27. Group PMA IQ				C20	115.8	12.8	19	119.2	24.1
				V23	114.3	12.6	23	120.8	23.3
28. Educational Age				C21	150.3	14.9	18	155.3	19.4
				V24	147.8	15.5	23	154.0	18.7
29. Educational Quotient				C21	111.9	10.9	18	116.0	14.3
				V24	110.0	11.7	23	115.6	13.7
30. Reading Age				C21	156.1	20.1	19	165.0	25.9
				V24	152.6	21.0	24	163.0	24.6
31. Reading Quotient				C21	116.1	14.7	19	123.7	19.3
				V24	113.5	15.7	24	122.6	18.2
32. Organismic Age				C21	150.1	12.0	19	148.7	11.9
				V24	149.1	12.0	24	150.0	13.3

TABLE V

CROSS CLASS COMPARISONS FOR GRADE VII

Variables	1962			1963			1964		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
1. Motivation	**C42	106.3	26.1				20	127.8	33.8
	*V51	103.6	25.5				47	130.2	33.6
2. Teacher as Learning Facilitator	C42	140.0	20.3				20	138.8	26.2
	V51	138.9	24.1				47	139.3	27.2
3. Conventional Learning Process	C42	111.6	17.8				20	106.3	21.6
	V50	109.2	18.7				47	105.4	23.7
4. Complementary Learning Process	C42	120.3	20.1				20	104.0	20.5
	V50	122.7	20.0				47	106.9	21.9
5. LEARNING INDEX	C42	133.8	21.8				20	130.2	28.8
	V51	130.5	30.3				47	131.6	27.5
6. Rigid vs Flexible	C42	101.3	11.4				20	102.4	9.8
	V50	102.2	11.7				47	100.6	12.4
7. Generally Accepting Social Climate	C42	109.0	23.5				20	108.2	19.3
	V50	110.7	22.6				47	108.2	20.5
8. Acceptance Given	C41	98.3	18.5				20	91.4	19.7
	V49	97.0	18.4				46	92.2	18.7
9. Acceptance Received	C42	90.8	26.3				20	92.0	26.1
	V51	92.5	26.1				47	89.0	26.5
10. SOCIAL CLIMATE INDEX	C42	93.7	33.9				20	91.2	25.5
	V51	93.0	38.8				47	89.3	28.4
11. School Anxiety	C42	85.2	13.9				20	75.4	30.1
	V51	83.9	13.9				46	84.0	30.8
12. Emotionally Supportive Classroom	C42	87.9	17.0				20	97.8	18.6
	V51	88.6	16.7				47	97.1	24.6
13. MENTAL HEALTH INDEX	C42	85.7	10.7				20	87.5	16.7
	V51	85.5	10.3				47	89.8	23.1
14. Self Norms	C42	75.6	22.1				20	107.2	29.8
	V51	75.9	22.7				46	104.5	27.8
15. Group Norms	C42	99.4	15.1				20	101.9	26.0
	V50	99.8	14.2				47	103.0	21.5
16. SEMANTIC DIFFERENTIAL	C39	103.5	25.1				21	85.8	25.8
	V47	104.0	24.2				48	84.6	23.2
17. TOTAL SELF ESTEEM	C38	102.2	26.6				21	93.3	24.6
	V46	101.7	25.0				47	94.4	22.0

*V stands for Variable N
**C stands for Constant N

TABLE V

CROSS CLASS COMPARISONS FOR GRADE VII (Cont'd)

Variables	1962			1963			1964		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
18. Personal Self Esteem	C38	101.2	28.6				21	94.9	24.2
	V46	100.4	27.4				47	96.7	20.8
19. Social Self Esteem	C38	118.4	21.1				21	104.0	21.7
	V46	117.5	20.0				47	104.2	21.8
20. School Self Esteem	C38	87.8	22.4				19	89.6	18.7
	V46	89.2	21.9				44	87.7	20.8
21. Need - Achievement	C35	99.9	23.9				21	105.6	18.1
	V43	99.7	23.3				48	104.3	20.5
22. Need - Affiliation	C35	103.4	19.4				21	98.9	22.4
	V43	105.0	19.9				48	98.4	19.9
23. Need - Influence	C35	101.8	28.1				21	96.2	15.1
	V43	102.0	27.9				48	99.4	16.6
24. Sex	C42	1.5	.5				21	1.4	.5
	V52	1.5	.5				48	1.5	.5
25. Chronological Age	C42	153.7	4.9				21	151.8	4.8
	V51	153.5	4.6				43	152.2	4.2
26. Individual IQ Binet or Weschler	C42	117.1	11.0				21	131.5	12.4
	V51	117.1	11.1				39	127.2	14.4
27. Group PMA IQ	C40	108.4	15.7				21	112.1	17.4
	V49	107.1	16.8				41	112.5	18.1
28. Educational Age	C41	160.0	21.6				21	157.5	14.9
	V50	159.5	23.8				42	160.6	17.2
29. Educational Quotient	C41	108.2	14.3				21	108.1	10.1
	V50	107.9	15.9				42	110.0	11.8
30. Reading Age	C41	174.6	28.1				21	169.0	22.4
	V50	173.2	31.2				42	171.1	22.2
31. Reading Quotient	C41	118.2	19.0				21	116.0	15.5
	V50	117.3	21.3				42	117.1	15.3
32. Organismic Age	C41	160.8	16.7				21	161.6	13.0
	V50	163.1	17.1				43	163.0	15.5

TABLE VI

CROSS CLASS COMPARISONS FOR GRADE VIII

Variables	1962 N	1962 Mean	1962 S.D.	1963 N	1963 Mean	1963 S.D.	1964 N	1964 Mean	1964 S.D.
1. Motivation	**C36	98.4	14.2	42	110.7	21.7			
	*V48	97.9	14.5	51	111.6	20.7			
2. Teacher as Learning Facilitator	C36	117.8	15.9	42	134.3	21.5			
	V48	115.0	17.1	51	132.6	23.0			
3. Conventional Learning Process	C36	101.7	22.7	42	100.6	26.1			
	V48	103.3	22.0	51	99.1	25.2			
4. Complementary Learning Process	C36	108.4	18.9	42	96.3	23.1			
	V48	107.4	18.0	51	97.1	22.3			
5. LEARNING INDEX	C36	110.1	19.0	42	116.7	26.6			
	V48	108.7	18.5	51	116.5	25.7			
6. Rigid vs Flexible	C36	101.1	11.1	42	98.4	13.9			
	V48	102.2	10.7	51	99.3	15.1			
7. Generally Accepting Social Climate	C36	108.5	21.5	42	103.0	26.6			
	V48	104.0	24.5	51	105.3	25.6			
8. Acceptance Given	C36	105.1	19.3	42	105.5	22.9			
	V47	104.5	19.0	51	101.5	25.8			
9. Acceptance Received	C36	102.7	30.4	42	100.9	22.3			
	V48	98.5	32.0	49	100.6	24.9			
10. SOCIAL CLIMATE INDEX	C36	103.6	25.3	42	99.6	25.8			
	V48	98.4	28.4	51	96.2	33.0			
11. School Anxiety	C36	108.2	13.3	42	105.9	26.9			
	V48	109.2	12.9	51	107.1	25.9			
12. Emotionally Supportive Classroom	C36	78.4	14.9	41	98.8	27.4			
	V48	79.6	17.0	50	101.0	26.7			
13. MENTAL HEALTH INDEX	C36	83.4	10.0	42	93.1	24.1			
	V48	84.5	11.4	51	95.4	23.9			
14. Self Norms	C36	78.8	18.2	42	108.4	21.3			
	V48	75.9	19.3	51	111.0	20.7			
15. Group Norms	C36	96.1	18.1	42	113.3	18.1			
	V48	94.9	18.2	51	114.0	18.8			
16. SEMANTIC DIFFERENTIAL	C36	110.3	20.7	39	94.1	28.9			
	V48	105.1	24.2	48	93.4	27.7			
17. TOTAL SELF ESTEEM	C36	104.1	21.3	39	99.1	20.8			
	V47	101.0	26.1	48	99.0	22.8			

*V stands for Variable N
**C stands for Constant N

TABLE VI

CROSS CLASS COMPARISONS FOR GRADE VIII (Cont'd)

Variables	1962 N	1962 Mean	1962 S.D.	1963 N	1963 Mean	1963 S.D.	1964 N	1964 Mean	1964 S.D.
18. Personal Self Esteem	C36	105.4	20.5	39	101.2	21.4			
	V47	102.7	25.1	48	110.7	23.7			
19. Social Self Esteem	C36	115.6	20.2	39	110.0	25.5			
	V47	112.7	21.8	48	109.2	25.2			
20. School Self Esteem	C36	77.4	28.6	39	74.9	26.0			
	V45	77.6	28.6	48	76.1	27.2			
21. Need - Achievement	C34	96.6	24.1	42	94.0	25.0			
	V45	99.6	23.9	51	95.6	23.5			
22. Need - Affiliation	C34	101.9	19.1	42	106.1	18.7			
	V45	101.2	18.9	51	105.9	17.9			
23. Need - Influence	C34	112.6	25.6	42	97.3	24.7			
	V45	110.4	23.6	51	96.0	22.9			
24. Sex	C36	1.5	.5	42	1.5	.5			
	V48	1.5	.5	51	1.5	.5			
25. Chronological Age	C36	163.8	5.3	42	165.7	4.8			
	V45	164.4	5.7	50	165.8	4.7			
26. Individual IQ Binet or Weschler	C36	116.4	9.7	42	117.1	11.0			
	V45	116.0	9.7	50	118.3	10.7			
27. Group PMA IQ	C31	108.0	20.5	40	108.4	15.7			
	V39	106.5	19.2	45	107.6	17.0			
28 Educational Age	C34	182.7	21.7	42	170.3	16.6			
	V43	182.4	21.0	49	170.6	18.5			
29. Educational Quotient	C34	115.8	14.5	42	107.5	9.9			
	V43	114.9	14.0	49	107.5	11.2			
30. Reading Age	C34	200.6	24.4	42	179.6	20.4			
	V43	200.3	23.6	49	179.8	22.7			
31. Reading Quotient	C34	127.3	15.9	42	112.7	13.2			
	V43	126.3	15.1	49	112.8	14.7			
32. Organismic Age	C35	178.3	10.7	42	175.1	15.5			
	V44	178.0	11.4	50	175.8	16.0			

TABLE VII

CROSS CLASS COMPARISONS FOR GRADE IX

Variables	1962			1963			1964		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
1. Motivation	**C41 *V54	95.4 96.1	18.0 17.6	35 55	95.9 94.4	26.9 28.4	42 57	97.2 98.3	22.7 23.4
2. Teacher as Learning Facilitator	C41 V54	102.3 100.4	20.5 21.2	35 55	100.4 98.5	35.1 35.0	42 57	107.8 110.4	26.3 24.6
3. Conventional Learning Process	C41 V53	81.6 77.6	19.7 20.4	35 55	81.7 80.7	15.9 15.4	42 57	91.8 91.7	20.8 19.4
4. Complementary Learning Process	C41 V53	105.8 106.2	20.7 20.0	35 55	91.7 92.3	23.6 23.2	42 57	80.8 81.7	19.6 20.8
5. LEARNING INDEX	C41 V54	92.5 89.0	18.8 24.4	35 55	85.3 83.8	30.1 31.7	42 57	87.8 89.8	20.0 22.0
6. Rigid vs Flexible	C41 V52	85.9 86.4	11.8 11.6	35 55	91.5 91.3	11.4 12.1	42 57	90.0 89.3	12.8 12.2
7. Generally Accepting Social Climate	C41 V53	97.6 96.1	23.7 23.7	35 55	95.1 96.0	21.3 21.5	42 57	93.0 95.5	27.3 26.8
8. Acceptance Given	C39 V48	100.2 98.7	20.0 19.7	35 55	109.6 107.7	21.9 22.5	41 56	99.6 100.5	24.9 23.0
9. Acceptance Received	C42 V54	101.4 98.8	23.9 24.5	36 56	111.1 109.6	23.1 22.8	42 57	97.6 95.3	22.6 26.5
10. SOCIAL CLIMATE INDEX	C42 V54	85.2 80.4	29.8 32.6	36 56	100.6 100.1	33.8 31.4	42 57	88.9 89.3	27.1 26.6
11. School Anxiety	C41 V52	93.9 94.3	12.1 12.2	35 55	115.5 112.8	27.0 26.5	42 56	101.9 103.2	22.9 22.9
12. Emotionally Supportive Classroom	C41 V54	84.4 81.9	12.4 17.2	35 55	96.2 95.5	16.2 16.1	42 57	92.8 94.4	18.2 17.7
13. MENTAL HEALTH INDEX	C41 V54	81.4 77.4	14.2 25.1	35 55	103.9 102.0	19.8 21.2	42 57	93.6 94.9	21.5 21.2
14. Self Norms	C41 V52	83.0 82.3	17.4 16.5	35 55	105.3 106.9	19.8 19.2	42 56	101.6 101.2	20.8 19.5
15. Group Norms	C41 V52	96.9 95.7	17.1 16.8	35 55	96.0 98.0	24.8 24.7	42 57	100.8 100.0	20.6 20.5
16. SEMANTIC DIFFERENTIAL	C35 V42	89.4 90.1	25.2 23.8	34 54	100.3 103.0	21.2 20.2	42 56	93.4 96.3	25.1 24.6
17. TOTAL SELF ESTEEM	C35 V42	96.3 98.2	24.2 23.4	30 49	112.2 112.0	14.6 15.5	42 57	98.0 99.2	18.9 21.2

*V stands for Variable N
**C stands for Constant N

TABLE VII

CROSS CLASS COMPARISONS FOR GRADE IX (Cont'd)

Variables		1962			1963			1964	
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
18. Personal Self Esteem	C35	97.8	26.1	30	112.3	15.1	42	97.1	21.7
	V42	99.6	25.3	49	112.1	15.5	57	98.4	22.9
19. Social Self Esteem	C35	114.6	19.7	30	123.2	18.4	42	114.6	19.7
	V42	114.5	19.7	49	122.0	18.1	57	114.7	21.9
20. School Self Esteem	C31	72.1	21.9	29	86.8	20.5	42	76.1	22.3
	V38	74.6	21.6	48	87.1	20.8	57	76.9	22.9
21. Need-Achievement	C 0			33	95.5	25.0	42	100.8	23.8
	V 0			51	98.0	23.3	57	99.9	23.2
22. Need - Affiliation	C 0			33	106.1	19.3	42	105.6	18.0
	V 0			51	104.1	18.6	57	104.3	17.2
23. Need - Influence	C 0			33	97.6	24.8	42	92.5	21.5
	V 0			51	96.9	26.1	57	94.0	21.2
24. Sex	C42	1.4	.5	36	1.5	.5	42	1.5	.5
	V55	1.5	.5	56	1.5	.5	58	1.5	.5
25. Chronological Age	C42	176.5	4.5	36	175.7	5.6	42	177.7	4.8
	V51	187.0	75.0	54	176.5	5.5	56	177.3	4.9
26. Individual IQ Binet or Weschler	C42	121.1	11.5	36	116.4	9.7	42	117.5	11.4
	V51	123.5	15.7	54	117.1	10.1	55	117.8	11.8
27. Group PMA IQ	C42	118.8	19.9	36	115.8	18.9	42	118.8	22.8
	V51	129.7	63.5	54	115.0	19.3	55	118.0	21.8
28. Educational Age	C41	195.5	23.2	36	188.0	17.3	42	188.6	21.1
	V50	201.8	33.5	54	189.3	17.3	55	189.6	21.0
29. Educational Quotient	C41	114.8	14.9	36	110.8	11.1	42	109.9	12.9
	V50	120.9	35.2	54	110.9	11.2	55	110.7	13.3
30. Reading Age	C41	208.6	26.9	36	205.0	20.9	42	194.1	22.2
	V50	212.6	29.6	54	204.9	20.4	55	196.4	22.3
31. Reading Quotient	C41	122.5	16.5	36	120.8	12.4	42	113.1	13.7
	V50	129.2	30.8	54	120.0	12.0	55	114.7	14.1
32. Organismic Age	C42	195.9	15.7	36	190.0	11.8	42	187.0	17.1
	V51	191.5	30.4	54	191.7	12.5	56	188.0	16.2

TABLE VIII

CROSS CLASS COMPARISONS FOR GRADE X

Variables	1962			1963			1964		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
1. Motivation				**C42	103.7	21.4	36	91.3	31.1
				*V52	105.7	21.7	58	95.3	30.2
2. Teacher as Learning Facilitator				C42	146.6	19.3	36	132.9	25.7
				V52	145.5	18.9	58	131.2	25.1
3. Conventional Learning Process				C42	95.0	15.2	36	92.6	15.7
				V52	97.1	16.7	58	91.1	16.1
4. Complementary Learning Process				C42	84.7	19.2	36	85.0	21.4
				V52	83.7	18.5	58	86.6	20.3
5. LEARNING INDEX				C42	92.3	17.8	36	81.1	25.4
				V52	93.0	17.1	58	82.3	25.3
6. Rigid vs Flexible				C42	84.7	5.2	36	87.6	8.0
				V52	85.1	6.0	57	88.4	8.1
7. Generally Accepting Social Climate				C42	106.0	19.9	36	108.7	21.8
				V52	105.8	20.4	58	110.0	21.3
8. Acceptance Given				C41	93.5	19.2	36	105.4	26.4
				V51	95.0	21.1	58	102.9	26.1
9. Acceptance Received				C42	94.1	24.9	36	103.4	27.1
				V52	94.4	24.9	58	103.1	25.4
10. SOCIAL CLIMATE INDEX				C42	89.2	21.9	36	102.6	26.1
				V52	90.6	23.6	58	101.8	25.5
11. School Anxiety				C41	87.1	24.7	36	107.1	25.1
				V51	88.3	24.7	58	107.6	24.6
12. Emotionally Supportive Classroom				C42	99.1	13.7	36	97.5	18.0
				V52	99.8	14.7	58	98.7	21.9
13. MENTAL HEALTH INDEX				C42	92.3	17.0	36	101.2	18.2
				V52	93.4	16.8	58	102.3	20.8
14. Self Norms				C42	108.4	15.4	36	97.7	23.4
				V52	107.3	17.9	58	101.4	21.1
15. Group Norms				C42	95.3	30.0	36	103.3	26.1
				V52	95.1	30.3	58	103.3	25.0
16. SEMANTIC DIFFERENTIAL				C45	98.5	19.7	35	95.1	19.7
				V45	98.5	19.7	35	95.1	19.7
17. TOTAL SELF ESTEEM				C45	99.2	19.1	35	98.0	22.0
				V45	99.2	19.1	35	98.0	22.0

*V stands for Variable N
**C stands for Constant N

TABLE VIII

CROSS CLASS COMPARISONS FOR GRADE X (Cont'd)

Variables	1962			1963			1964		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
18. Personal Self Esteem				C45	102.9	21.1	35	100.6	23.2
				V45	102.9	21.1	35	100.6	23.2
19. Social Self Esteem				C45	113.3	16.9	35	114.3	22.0
				V45	113.3	16.9	35	114.3	22.0
20. School Self Esteem				C45	58.5	23.4	33	61.4	23.4
				V45	58.5	23.4	35	61.4	23.4
21. Need - Achievement				C40	97.1	26.6	36	96.1	24.8
				V50	98.4	26.9	58	95.3	22.5
22. Need - Affiliation				C40	100.4	20.7	36	103.4	24.2
				V50	96.5	21.5	58	100.8	23.2
23. Need - Influence				C40	102.3	24.4	36	99.2	22.6
				V50	104.9	24.7	58	102.9	21.9
24. Sex				C42	1.4	.5	36	1.5	.5
				V53	1.5	.5	59	1.5	.5
25. Chronological Age				C42	188.5	4.5	36	187.8	5.6
				V52	188.4	4.4	56	187.5	5.3
26. Individual IQ Binet or Weschler				C42	121.1	11.5	36	118.4	9.6
				V51	120.5	11.6	54	119.4	11.0
27. Group PMA IQ				C42	119.6	19.5	36	114.9	18.6
				V44	120.6	19.8	47	115.4	19.6
28. Educational Age				C42	204.6	24.0	36	196.9	17.1
				V52	205.7	23.9	54	201.1	19.4
29. Educational Quotient				C42	112.3	14.5	36	108.1	9.8
				V52	113.0	14.4	54	110.5	11.4
30. Reading Age				C42	215.1	23.0	36	211.3	19.6
				V52	216.2	22.4	54	212.4	20.5
31. Reading Quotient				C42	117.9	13.6	36	116.0	11.0
				V52	118.6	13.3	54	116.6	11.9
32. Organismic Age				C42	204.5	14.7	36	201.2	12.2
				V52	205.1	13.7	56	203.3	14.8